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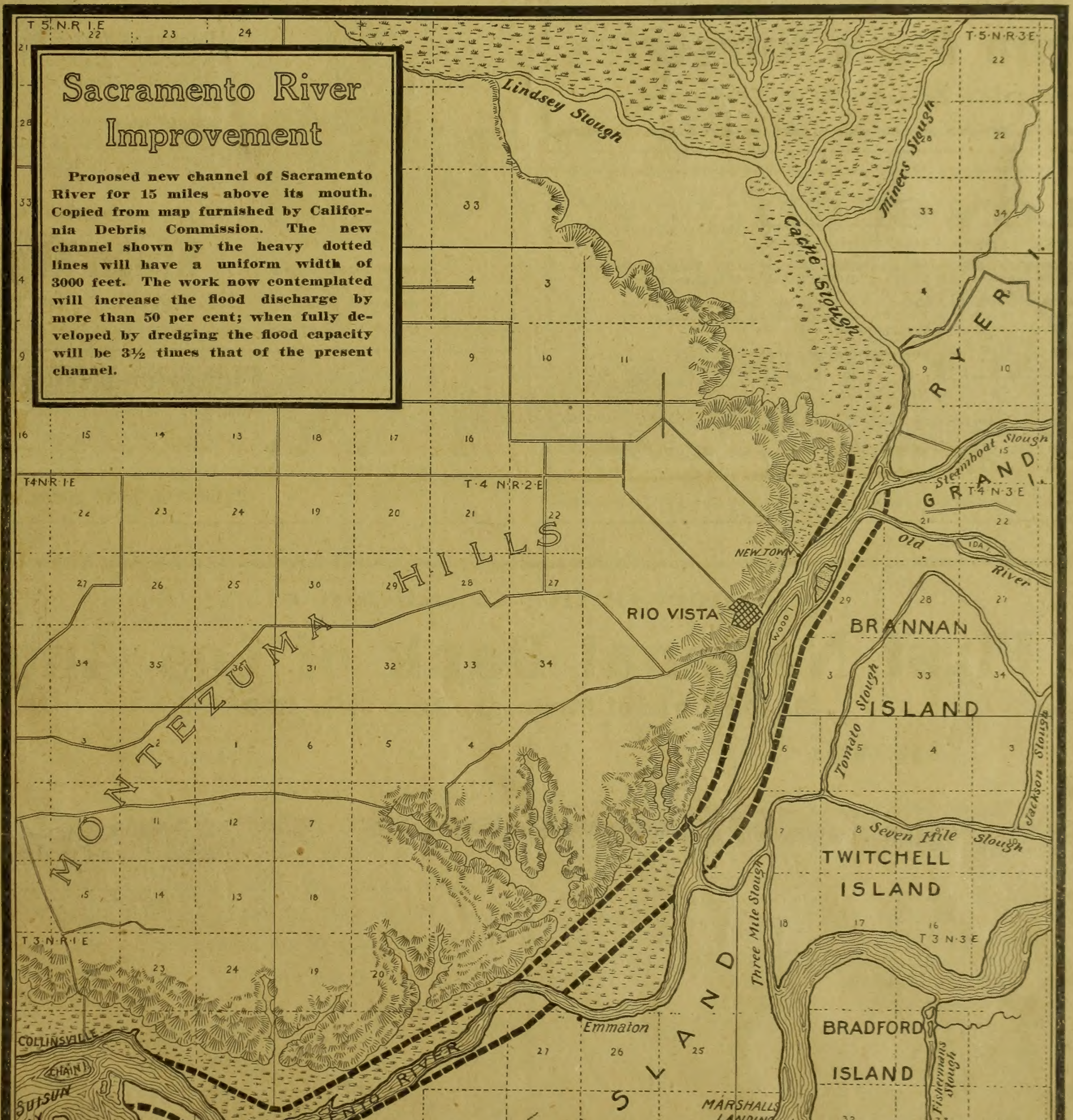
California Cultivator

An Illustrated Weekly Magazine, Devoted to the Rural Home and Ranch. One Dollar per Year.

Los Angeles July 7, 1910 San Francisco



Sacramento River Improvement

Proposed new channel of Sacramento River for 15 miles above its mouth. Copied from map furnished by California Debris Commission. The new channel shown by the heavy dotted lines will have a uniform width of 3000 feet. The work now contemplated will increase the flood discharge by more than 50 per cent; when fully developed by dredging the flood capacity will be 3½ times that of the present channel.

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2000 WHITE LEGHORN HENS, $10 PER DOZEN

RIGHT NOW

We have 2000 White Leghorn hens and pullets contracted for. Most of them are 10 months old; as long as they last we offer them at $10 per dozen in dozen lots and we pack and ship them anywhere. Cocks are $2 each.

These hens and pullets are all young and are standard stock, all are pure white and healthy. If you need hens or pullets of the White Leghorn, right now is the time to get them. By September they will be selling at $1 each or more and will be practically impossible to obtain.

We are selling three-months-old Buff Orpington pullets and Rhode Island Red pullets at $9 per dozen. Write us for any kind of grown poultry. FREE 32-page book mailed on request. We are still selling 10,000 chicks per week.

Pioneer Hatchery Co., 112 E. 8th, Los Angeles

Wholesale 360 Acres Retail

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Ceres, California

A complete line of Nursery Stock. Special prices on Peach, Plum and Apricots. It will pay you to let us figure with you before placing your order for Spring planting. All stock guaranteed true to name.

Smyrna Park Nurseries

Campin & Moffet, Prop's.

MELON SEED

We have taken great care in procuring the best grades of Melon Seeds. The principal varieties we have grown under our personal supervision.

Water Melons—We offer the leading varieties of tested merit. We especially recommend our Black Seeded Chilean at $1.25 per pound and the Pasadena at $2.00 per pound.

Musk Melon—We have the Model at $2.50 a pound and Gautier's Pineapple at $1.25 a pound. These are both of proven qualities, being the best varieties for market purposes. Try some of our Red Rover at 15c an ounce, $2.00 per pound.

EUCALYPTUS

Get our prices on Trees and your requirements of seed for next season.

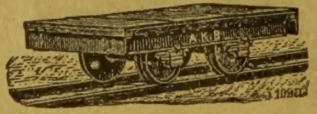
We have a fine stock of trees—all leading varieties.

Send for Our Catalogue

MORRIS & SNOW SEED CO. 425 So. Main Street
Los Angeles, Cal.

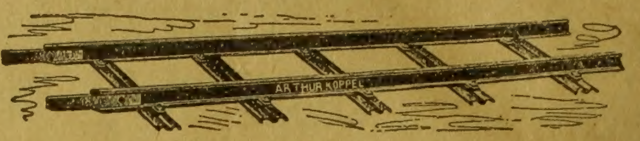
A Railway on the Ranch

Saves Much of the Hard Labor



The equipping of the ranch with a ***Portable Railway*** is a very ***Profitable Investment*** and ***not*** expensive.

Our booklet S. F. 60 gives several suggestions for applying it to the Dairy, Orchard, Vineyard, etc.



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Agents, B. F. Kierulff, Jr. & Co., Inc.
120 So. Los Angeles St., Los Angeles

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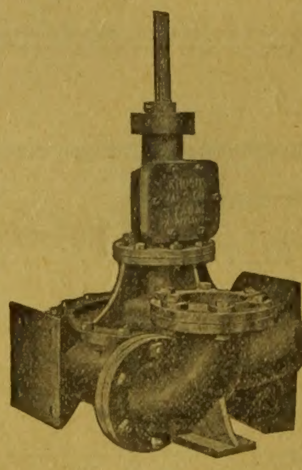
San Francisco, Cal.

A. Newhouse
Union Bank Building, Fresno

This Pump

Will Interest the Irrigator



Krogh New Type Vertical Water Balanced Pump

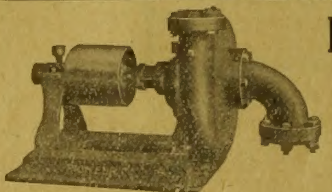
Pump has Water Sealed Gland, Enclosed Balanced Impellor. Will not cut out by sand. Can be placed in a smaller pit than any other pump. Our Bulletin, C12, tells all about it. We have a permanent branch house at

206 No. Los Angeles St., Los Angeles

Krogh Mfg. Co.

149 Beale St. San Francisco, Cal.

PIONEER CENTRIFUGAL PUMP



Will deliver water at less speed and with less power than any other pumps. Sells at a less price than any other centrifugal pump in existence.

The Pioneer is built for service and wear—made of best of iron. Our pumps are warranted and we save you money.

Agents Wanted. Write for prices and catalogue.

PEERLESS IRON WORKS, 126 O Street
Sacramento, Cal.

Report of the Condition of

The First National Bank of Los Angeles

At the Close of Business, June 30th, 1910

RESOURCES

Loans and Discounts			$11,540,793.88
Overdrafts, secured and unsecured			23,724.99
U. S. Bonds to secure circulation			1,250,000.00
U. S. Bonds to secure U. S. Deposits			305,000.00
U. S. Bonds on hand			55,000.00
Premiums on U. S. Bonds			None
Bonds, Securities, etc. (Bonds only)			882,600.00
Due from National Banks (not reserve agents)		$ 971,629.79	
Due from State banks and bankers		242,752.82	
Due from approved reserve agents		922,659.45	
Checks and other cash items		117,263.05	
Exchange for clearing house		322,600.54	
Notes of other National Banks		50,747.00	
Fractional paper currency, nickels and cents		7,138.38	
Lawful money reserve in bank, viz.:			
Specie	$2,286,763.00		
Legal tender notes	86,700.00	2,373,463.00	
Cash and Sight Exchange			**5,008,254.03**
Redemption Fund with U. S. Treasurer			62,500.00
Total			**$19,127,872.90**

LIABILITIES

Capital Stock Paid In		$ 1,250,000.00
Surplus Fund		250,000.00
Undivided Profits, less expenses and taxes paid		$ 1,518,980.45
National Bank notes outstanding		1,102,450.00
Due to other National Banks	$ 1,564,874.29	
Due to State banks and bankers	881,743.26	
Due to trust and savings banks	990,901.96	
Dividends unpaid	63,755.00	
Individual deposits subject to check	10,347,504.84	
Demand certificates of deposit	571,547.75	
Certified checks	65,037.53	
Cashier's checks outstanding	119,226.16	
U. S. Deposits	389,784.89	
Letters of credit	4,476.00	
Total Deposits		**14,998,851.68**
Reserved for Taxes		7,590.77
Total		**$19,127,872.90**

No Real Estate. No Furniture and Fixtures. No Premium on U. S. Bonds.

STATE OF CALIFORNIA, County of Los Angeles, ss.

I, W. T. S. Hammond, Cashier of the above named Bank, do solemnly swear that the above statement is true to the best of my knowledge and belief.

W. T. S. HAMMOND, Cashier.

Subscribed and sworn to before me this 1st day of July, 1910.
W. N. HAMAKER, Notary Public.

Correct—Attest:
J. M. ELLIOTT, JOHN P. BURKE,
STODDARD JESS, W. C. PATTERSON, } Directors

California Cultivator

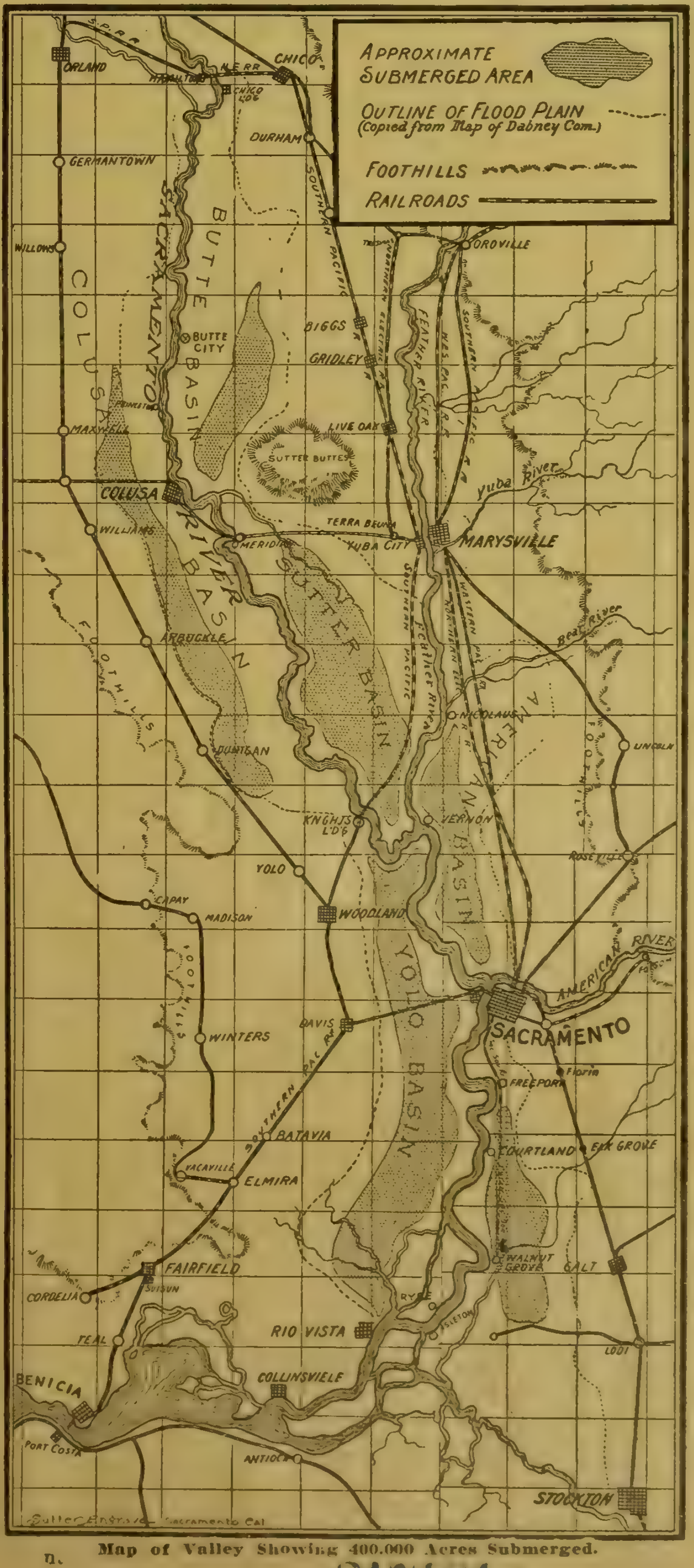
Vol. XXXV—No. 1 Los Angeles, California Thursday, July 7, 1910 Subscription $1 a Year

Courtesy Great West, Published at Sacramento by W. A. Beard

Where the Three Rivers Meet Near Rio Vista.

Sacramento River Improvement Proposed

Nearly a million will be spent on the lower Sacramento river within the next few years. It will save vast damage to lands above and it will add vastly to productive power of those lands. It is a step which will lead to greater ones and calls for hearty congratulations to the people of the Sacramento Valley. The map on the cover page gives a clear idea of the contemplated improvements.



Map of Valley Showing 400,000 Acres Submerged.

THE State of California has appropriated $400,000, the Congress of the United States is about to appropriate $400,000, making a total of $800,000 which will soon be available for the improvement of the Sacramento river, "Provided all rights of way needed for levees and spoil banks have been furnished the United States free of cost."

These rights of way, which must be furnished by persons, corporations and municipalities interested, will cost about $225,000, making a total of one million dollars to be expended in widening and dredging the mouth of the Sacramento river.

The present channel of this stream for a distance of 15 miles above its mouth is very narrow and affords an insufficient outlet for the waters that accumulate in the river and adjacent basins during flood periods. The improvement contemplated is designed to facilitate movement of the flood waters to Suisun bay by providing a flood channel of adequate capacity. With this object in view the channel from Rio Vista to Collinsville, which is now only about 700 feet in width at the narrowest places, is to be given a uniform width for the 15 miles of, about 3,000 feet. This will give an immediate increase of fifty per cent in flood capacity, and afford opportunity for further increase by dredging to more than three times the present capacity.

This work has been proposed by the California Debris Commission, composed of Engineers of the United States War Department, and it is a part of a great plan designed to effect the control of the Sacramento floods. This plan has been in preparation for some time and will be submitted to the Chief of Engineers in the early future. It contemplates the progressive improvement of the entire river system from the mouth at Collinsville to the heads of navigation at Red Bluff and Marysville.

No pen can adequately describe the manifold advantages of the improved lands of the California delta. One of the most delightful excursions in California is afforded by the river steamers which ply these streams. Orchards border the river in almost unbroken line, and beyond these are vast tracts devoted to vegetables of many kinds, alfalfa and other farm crops. The river is lined with handsome homes.

It is of the greatest importance to the entire Sacramento Valley that this project for the improvement of the mouth of the stream be undertaken and pushed to completion. An enlarged outlet at the river's mouth will open the way for enlargement of flood channels up stream.

It is of especial importance to the city of Sacramento, situated on the bank of the river, in the heart of the vast fertile territory to be benefited, and itself within the flood zone. It must be borne in mind that the great basins lying on either side of the river, which now afford vast storage capacity and to an extent equalize the flood flow, are about to be reclaimed and that as this reclamation progresses some adequate provision for passing the floods must become an imperative need of this city. These basin lands are among the most productive in the state, and their reclamation is very much to be desired, especially by the city of Sacramento, of which they will become a chief asset. The loss of storage space involved in their reclamation entails a greater problem which must be met either by enlarging the river channels or by raising the city levees.

About one-half of the amount necessary for the purchase of rights of way needed for the improvement now contemplated has been subscribed, and

(Continued on Page 16.)

217181

Distillate Traction Engine

Double Cylinder 50 H.P.

For Plowing or Hauling will do the work of Twenty-Five Horses

For Pumping or Other Power 50 H. P. Available from Pulley on Engine

Two Speeds Forward, One Back, all on Direct Drive

Easy as an Automobile to Handle. Only Two Levers, One to Drive, One to Control Power Steering Gear.

No Tank Wagon Required.

75% *Less in Cost* *Lighter in Weight* **Than** *A Steam Traction Engine*

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Smith-Booth-Usher Co
212-214 So. Los Angeles St.
Los Angeles, Cal.

GYPSUM

The Great Soil Corrector

It increases the yield of alfalfa.
It strengthens and produces food for the orange tree.
It furnishes lime for the plant.
It corrects sour and alkaline soils.
All at a very low cost per acre.
Prompt deliveries made everywhere.
Send for our booklet and prices.

Bollinger & Crane
Riverside, Cal.

HYDRATED LIME

1 pt. Taylor's Hydrated Lime mixed in a common mortar box
3 parts best Resublimed Flowers Sulphur
Has given highly satisfactory results in many orange groves, gone over by several different contractors using largest power machines, as a dry spray for the

Red Spider of the Orange

Hydrated lime is the ideal diluent and vehicle for the sulphur—and reduces the cost.

$15.00 a ton net in 100 lb. Sacks. Sacks 15c extra.

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J. S. SCHIRM 4th. and K Streets, San Diego, Cal.

Orange Trees For Sale

Navel and Valencia.
J. S. Killian, El Monte, Cal.
Phones: Sunset, 8x4. Home, Red 31, or
L. C. Rice, Tropico, Cal.
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HARVEY BOLSTER SPRINGS

Soon save their cost. Make every wagon a spring wagon, therefore fruit, vegetables, eggs, etc., bring more money. Ask for special proposition. Harvey Spring Co., 787 17th St., Racine, Wis.

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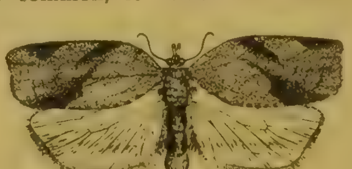
Citrus and Sub-Tropical Fruits

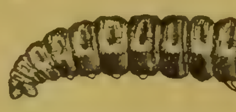
The ORANGE TORTRIX.

By Prof. A. J. Cook.

IN 1901, my attention was called to the work of a tiny caterpillar on the orange, in the orchard of Mr. Davenport, one and a half miles south of Claremont. Examination showed that the mischief was wrought by a small larva, one of the leafrollers, related to the well known codling moth. It was found that the caterpillar worked on the fruit and also on the foliage. Close examination proved that only about one orange in 100 was attacked, and as the late Alexander Craw reported to me that he had known the insect for twenty years, and so far it had not done any serious damage, I was thus led to believe that unless the insect changed its habits, or became much more common, it was no serious menace to our favorite Southern California industry. Almost every year since I have known of this little moth, and have not supposed it was a matter of any great importance, though I was a little anxious, as we may never know when the balance of nature in such cases may be interfered with, and a comparatively innoxious insect become a serious pest.



Early this season, I received a communication from a county commissioner, with the report of an orchardist in Los Angeles county, in which it was stated that this insect was doing great injury, and that this was the second year of very serious loss. I at once wrote the party, and received several boxes of the injured fruit. From this we have reared the moths, and are prepared to advise as to treatment.



The moth is known to science as Tortrix citrana Fernald. The imago, or mature moth is well shown in figure, which is magnfied 2½ times. It is yellowish brown in color, with dark markings as seen in the figure. The posterior wings are white, the palpi, head and thorax are the same color as the front wings, yellowish brown, while the abdomen is the color of the spots. The palpi are porrect, that is they extend straight forward from the head. The peculiar Tortrix form of wing, and the venation characteristic of this family of moths is well shown in the figure, which was drawn by one of my students, Mr. K. L. Carver.

The eggs are laid on the leaves or the fruit, and are very minute. The larva or caterpillar is very similar to the apple worm, Carpocapsa pomonella, which is familiar to all. It is well shown in the figure, five times magnified, also drawn by Mr. Carver. It is whitish, and when fully grown, leaves the fruit as does the apple caterpillar, to pupate in some crevice or other place of concealment. Like the apple worm, it spins a delicate cocoon. The pupa is not especially different from other pupae of tortricides.

The larva works in a small cavity eaten in the fruit, and the opening is concealed by a thin web. As with the apple or codling moth, there are two or three broods a year. As Dr. Fernald states in his description of this moth, that it works on golden rod and cherry, it would seem that it may be a native of California, and to have taken to the orange in preference to its native food. It may be, however, that both these conjectures are untrue and that it has been introduced on the orange from some other region, and that its old time food plant is the orange.

Remedy.

In case this continues to work havoc, especially if the mischief spread, then we must fight it just as we fight the codling moth. In this case we had better use the lead arsenate, 2 pounds to 50 gallons of water as a spray. In case the red mite (so called red spider) is doing us harm at the same time, which is very likely to be true, then we may mix the poison with the sulphur liquid used to destroy the mites and secure a double benefit. The lead arsenate is as effective as Paris green and never burns the foliage. Of course the spray must be thoroughly applied or it would not reach all leaves and fruit, and so would not be effective. The best time to apply it is yet to be determined, though it would be likely to be in the early spring. It might be thought to be dangerous to recommend this poison on fruit, yet I think the danger would be very slight. The amount on any single fruit would be very little, and that is on the peel, and would not remain long.

ADVANTAGES OF DEEP CULTIVATION.

W. F. Sutherst, Ph. D., F. I. C., Bishop, Cal.

A NUMBER of root diseases of farm crops can be attributed to bad soil aeration, due to imperfect cultivation; this is especially the case with some root crops such as beets. The surface soil is generally porous and consequently contains an ever changing supply of air, and being the only portion receiving manure, is swarming with bacteria, consequently the surface crops will grow well under ordinary conditions, but if encouraged to penetrate deeper into the soil, usually some of the roots are destroyed. It is peculiar that some plants such as alfalfa and trees can send their roots over 30 feet into a soil and flourish, yet others must keep to the surface. There must be some material difference in the structure of these roots to allow one to live where the other would perish.

One learns in the schools that carbonic acid gas is absolutely essential for plant growth, but it is rarely impressed on people that oxygen is also quite as necessary; every growing part of either animal or vegetable, requires this gas. True, in the latter case a very small quantity is essential as compared with the former. Since both leaves and roots are growing, both will need oxygen; leaves can get what they require from the air, but the roots have to depend upon what

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on the Latest Type of Deep Well
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Noiseless
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Save for the Home at the Home Savings

Your Money Grows Here

You draw out more than you put in when you become a savings depositor at this Home Bank. Your profit is definite, sure, constant. Every year is a prosperous one. Begin now. Keep your surplus funds at work.

We Pay
3% Interest on Minimum Monthly Balances of $300 or More, Account Subject to Checking.
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For Sale
Orange Trees

⅝ Inch Caliper
Fine, Strong, Healthy Trees
500 Washington Navels
1375 Valencia Lates
Navels $1 75 each, $150 per 100, $675 per 500
Valencias $1.50 each, $125 per 100, $1100 per 1000
Prices f. o. b. Los Angeles
Germain Seed and Plant Co.
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Orange Seedbed Stock
100,000 Sweet 60,000 Sour
All fine, healthy plants, good roots.
T. J. Locke 27 N. Stoneman Ave. Alhambra, Cal.

Valencia Fall Buds
2 to 3 feet high on sweet or sour stock.
Also Navels and Lemons for 1911
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EUCALYPTUS
TREES AND SEED
Sunset Nurseries, Tropico, Cal.

they can get out of the soil, which in any case is very small compared with the quantities above ground. The amount of air in surface soil is about 35 per cent of the soil volume, but only one-fifth of this is oxygen, in normal conditions, but owing to the absorption of this gas by decaying vegetable and animal matter, it sometimes falls to one-tenth of the whole. Subsoil naturally contains less as the pressure of the top layers compresses it, then water is more liable to collect and fill up the air spaces, consequently the proportion of air to soil is frequently one to ten.

Roots have a natural instinct for food search, and will wander first for water, next for mineral matter, but all the time these growing root ends need air-oxygen, and if they reach a place where no oxygen exists, decay takes place. The tap roots will cease to work, and the side roots take up their work, consequently a spreading in a horizontal direction is the result. This prevents planting the ground to its full extent and possible loss. If the soil is cultivated deeply, air penetrates into the subsoil and the roots find a suitable place for growth. Depth of soil is included in the area, and should be utilized to its full extent, but area is limited and everything should be done to make profitable the space at one's disposal.

In addition to the growing parts of a plant needing air, other soil inhabitants of vital importance to the farmer need it. There are the different kinds of bacteria which exist in such enormous quantities near the surface. The fact of them existing in that part of the soil, is obviously due to their need of air and a small quantity of moisture. The deeper one penetrates the soil, the less the number of microbes and the amount of air, but the greater the amount of water. Once the ground is opened up, there are two ways by which the air is carried down; one is by diffusion, that is a process of gas mixture taking place without external agencies when two different gases are in contact, the particles penetrating each other till complete mixture is obtained; so if fresh air can be brought in contact with the bad air of the subsoil, an involuntary renewal is bound to take place. The other means of air renewal is by rain or irrigating; the seeping water drags after it a supply of fresh air.

It is not only the root system which depends upon an oxygen supply for plant growth, but the fertilizing matter in the soil, which, with free access of air is converted into easily assimilable plant food, as its decomposition only takes place when air is present. The complicated organic matter of barnyard manure, corn stalks, roots, etc., must be converted into very simple substances before the roots of growing plants can absorb it.

A loose subsoil is essential for growth of root crops. We know that potatoes grow best in such soil, which sometimes occurs naturally and can be equally well produced by artificial means.

Plowing the first few inches means that the subsoil becomes year after year more impervious and less productive, and even the surface soil does not get the benefit it should, as the top layer is turned over just when it is getting into a good condition as to weathering and bacterial life, and a raw unfertile layer then takes its place. By deep cultivation alone, the air is taken down and the microbes will follow it. In this way we get a thick stratum of fertile soil, and weathering will liberate mineral plant food, so altogether the full power of the soil is utilized.

UNIVERSITY WORK IN SOUTHERN CALIFORNIA.

TO care for the diverse needs of California agriculturists the State Experiment Station working under the University of California, has established stations in different sections. Citrus conditions in the south long called for solution of problems which could only be studied on the ground. A few years ago urgent request was made of the State University and pushed especially by Mr. J. H. Reid and others of Riverside, which resulted in the establishment of the Southern California Pathological Laboratory which was ultimately located at Whittier. To meet the more immediate needs of growers in the great citrus section of Riverside, that was chosen as the location for experiment grounds to be conducted under the direction of the pathological station. These grounds have been put in charge of Prof. J. H. Norton, while Prof. Ralph E. Smith is in charge of the entire work in Southern California.

The regents of the university are required to adopt a general plan of work before the beginning of each fiscal year, which shall describe investigations and experiments to be pursued during the year. It is their duty to receive and consider written statements from individuals and associates interested in branches of horticulture, conveying plans or suggestions for investigations which they may approve or desire. Acting under this plan as fixed by the law establishing the Southern California station, Prof. E. J. Wickson recently submitted to the board of regents the following general plan and schedule for the year beginning July 1st:

The effort to circumvent the walnut blight will continue with studies of immune varieties which have been gathered and planted in the vicinity of the Plant Disease Laboratory at Whittier—including careful explorations for trees which are productive in spite of the blight in various parts of the state. Scions are taken from such trees and grafted into various stocks on our own ground so that systematic observations can be made, and are also grafted into trees in other regions so that practical tests of value under commercial handling can be had. We are also testing a large number of wild walnut species and hybrids to determine suitability for root stocks of the English walnut in various soils and moisture conditions.

Investigations in orange growing will be extended. Particular study will be made of "brown spot" which has caused great losses in shipping Preliminary work with this disease has yielded encouraging results and commanded the interest of growers who will cooperate with us by testing preventive measures in their packing houses. Gum disease and "yellowing" of citrus trees will be continued. Fertilization will be studied through field experiments and laboratory tests under conditions determined by analysis. All features of this effort will be extended to demonstrate tentative results already attained.

(Continued on Page 23.)

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The only positive eradicator of the **San Jose Scale, Red** and **Black Scale** and other insect pests.

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Pollard's Citrus Nurseries

We have been producing the best in citrus trees for

17 Years

We grow our own stock and each order has our personal attention. We are not jobbers and insure every tree true-to-name and in clean, healthy condition. Write your wants.

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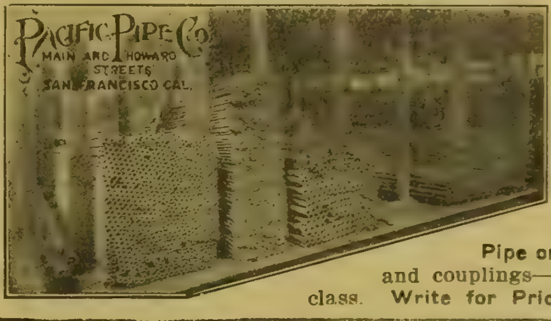

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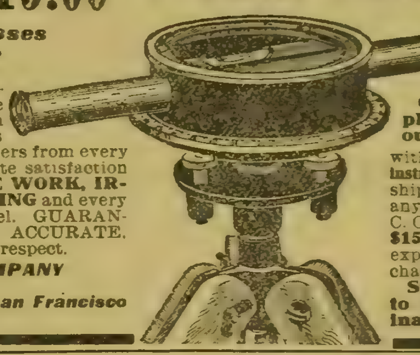
We can supply you with any size and quantity of Standard Pipe or Casing—all new threads and couplings—all stock guaranteed first class. Write for Prices and Particulars.

BOSTROM'S $15.00 FARM LEVEL

With Magnifying Glasses in the Telescope



enables you to read Target at a distance of over 400 yards, therefore the problem of a FARM LEVEL with TELESCOPE at moderate cost has at last been solved. Voluntary letters from every State in the Union show the complete satisfaction it gives for all kinds of **DRAINAGE WORK, IRRIGATION, DITCHING, TERRACING** and every sort of farm work requiring a Level. GUARANTEED to be absolutely SIMPLE, ACCURATE, DURABLE and dependable in every respect.

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Complete outfit with full **instructions**, shipped anywhere C. O. D. **$15.00** and express charges. **Subject to Examination.**

The KT Moulds

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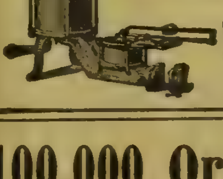

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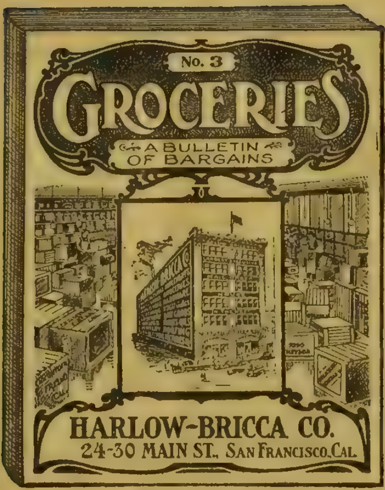

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HORTICULTURAL COMMISSIONERS AND COUNTY SUPERVISORS MEETING.

FOR sometime State Horticultural Commissioner Jeffrey has felt that there was not the harmony existing between the county commissioners and the state office, and between the county commissioners and the county boards of supervisors, that there should be to accomplish best results. In some counties in which horticultural interests are predominant, the board of supervisors has often treated the horticultural commission as a plum with which to pay political debts. The law passed by the last legislature was inspired by a desire to forestall political action in this important office, but through lobbying, amendments were added so that the desired point was largely obliterated before the bill reached the governor. Commissioner Jeffrey thinking the result might be secured by bringing together supervisors and horticultural commissioners, called a meeting at Sacramento June 24th and 25th. Nearly all sections of the state were represented by horticultural commissioners present but the supervisors were less in evidence. These were the ones which have the lesser need of this interest for those not represented are amongst the number who give less attention to the greatest industry of the state. We give below comments on the meeting by the Cultivator representative attending.

By John T. Bramhall.

Mr. Jeffrey explained the purposes of the conference as designed to secure a better and more effective co-operation between the county horticultural commissioners and the county supervisors. Special efforts had been made to secure the attendance of the supervisors so that views might be exchanged and a better understanding arrived at. He regretted that the attendance in this particular was so small, only six counties being represented, but those who were present would be treated as representatives of the rest. Mr. Jeffrey explained that the objects for which the horticultural commissioners were working were not selfish, or political, but were state-wide and indeed included the general agricultural interests as well as those of the fruit grower. The county horticultural commissioner labored for the grain farmer, the alfalfa growers, the beet growers, the hop men, the truck growers and all the varied interests of agriculture. As these producers sold their crops, as had been pointed out, for upwards of two hundred million dollars and paid out large sums for supplies, for labor and for freight, it would seem that their interests were not limited by occupation or section. He said that the policy pursued by some of the counties in ignoring and restricting the work of the horticultural commissioners was short-sighted and could only result in loss to the agricultural interests. Where one county in the south cheerfully appropriated $30,000 to the work of the horticultural commissioner, another reluctantly doled out a hundred dollars. And both counties got the worth of their money. Mr. Jeffrey called for heart to heart talks without any playing of politics or grinding of axes.

A resolution introduced by Roy K. Bishop, horticultural commissioner of Orange county, was passed, advocating the attendance by horticultural commissioners upon the farmers' institutes, granges and state and local fruit growers' meetings. In this way information can be given in answer to questions by growers and an opportunity will be offered to show what the horticultural commissioners are doing.

Prof. Elmore Chase, deputy horticultural commissioner of Sacramento county, cited instances where hundreds of acres of the best land of the state had been rendered unproductive by Johnson grass, wild morning glory, thistle and other weeds, with instances of reclamation through the aid of the horticultural commissioner.

Prof. Chase was appointed by the chair to prepare a resolution outlining a scheme to enlarge the influence and usefulness of the commissioners, but this plan of making them professors in a traveling university was too utopian to suit the general taste, and an amendment offered by Frank T. Swett, of Contra Costa, was adopted after long debate, recognizing the work of the county commissioners in instructing the growers and disseminating useful information but at the same time reminding them that they are to see that the law is obeyed.

Powers of Commissioners.

During the discussion an interesting and important point was brought out relating to the powers of the horticultural commissioners in compelling the destruction of weeds. In one of the southern counties the Russian thistle had appeared in threatening numbers on lands contiguous to another county where no effort had been made to clean up. Farmers argued that it was useless to attempt to clean up when the main trouble came from the other county. Now what authority had the horticultural commissioner in his own county, and could he invoke state aid as regards the neighbor county? "Go ahead and clean up in your own county," replied Commissioner Jeffrey, "you have full discretion and power; and then invite co-operation from your neighbor."

Judge N. P. Chipman, of Tehama county, spoke on the legal aspects of the horticultural commissioner's work and outlined the duty of the commissioners in going about the county policing the orchards and fields to see that moth nor rust do not corrupt nor pests break in and steal. It is the duty of the supervisors, he declared, to back up the action of the commissioners and uphold the administration of their office. They are county officers charged with a special and delicate duty for which they are peculiarly fitted. In the discharge of their duty they may cause considerable expenditure of money on the part of the county or of individuals, but it is for the public good, and in accordance with the laws which have been enacted and they should be sustained.

Commissioner Jeffrey asked the appellate court justice if it is a sound principle of law to force a man to clean up his orchard or do it and charge him with the cost. The judge replied that it certainly was, on the principle that a man must not use his property in a way to injure his neighbor. The public must be protected against the careless ones who create a nuisance.

Saving at the Spigot.

Eben Boalt, of Butte county, showed how the county supervisors might save at the spigot and waste at the bung. In his county some years ago, the yellow scale and the white fly managed to get control because the supervisors would not give a hundred and fifty dollars to carry on the necessary work of eradication. But the scale and the fly have done incalculable injury. The scale was located on one tree that had been brought into Oroville, and was allowed to spread over the city and into surrounding orchards.

Commissioner Jeffrey further explained that the "saving" of this $150 cost $5,000 in a fumigation bill alone and tnat spraying and other work ran the cost above $15,000. Every dollar paid o t for prevention is a good investment. Lack of co-operation means an expensive bill to the taxpayer.

Mr. George E. King, of Fair Oaks, presented a resolution which was adopted urging the boards of supervisors to post themselves on the horticultural interests and the necessity of their protection, and recommending the horticultural commissioners to make frequent reports and to hold conferences with the supervisors so as to get a better understanding on the work in which they are engaged.

The Plague and the Squirrel.

As an instance of the broadness of the conference and showing that the horticulturists do not limit their activities to narrow lines, Dr. W. F. Snow, secretary of the state board of health, was given the floor to present the status of the bubonic plague problem and the relation of squirrels thereto. Dr. Snow said the squirrel is not only the original plague carrier, communicating the disease to rats and so to man, but he is also the enemy of the orchardist, and so cooperation is asked, if protection of life is not a sufficient argument. The department of agriculture has no funds that can be devoted to a squirrel campaign, as he learned on his recent trip to Washington. The public health and marine hospital service is expending $14,000 per month in fighting the plague, and the state board of health, on behalf of the people more directly concerned, can spare but $1,500 per month to protect California from a plague.

Resolutions were passed endorsing the methods of squirrel extermination as suggested and urging the co-operation of county authorities.

For a County Office.

The closing session of the conference was occupied in discussion c the equipment of the county horticultural commissioners' offices, and the problem of securing more economy and effectiveness in their administration. On the first head it was urged that the horticultural commissioners were county officers, entrusted with great responsibilities and wide powers and should be, to use the military language, "obeyed and respected" accordingly. He should provide himself with a library of reference books and bulletins, for his own use and for the public, and should have in a suitable case a collection of the harmful insects of his county, properly labeled, with the parasites employed for their extermination. Such an exhibit would be of great value to the farmers and fruit growers and would go far, in the estimation of the public, to justify the expenditures of his office.

"Clean up."

James Mills, of Arlington, Riverside county, made an eloquent appeal to fruit growers to "clean up." He pointed out that notices had been given by Oregon, Washington and British Columbia that no oranges or lemons would be accepted unless entirely free from scale. Soon the interdict would be general, and the citrus fruit would be thrown back upon the grower or burned, if at all infected with scale. Eight years ago, he said, the orchards in his county were in very bad shape and ruin was threatened, but the protection afforded by intelligent horticultural commissioners supported by a wide-awake board of supervisors, had been the salvation of five thousand acres of orchard. Enforcement of the law by the county commissioners, with the hearty support of the county supervisors, was the thing urgently needed.

The conference spent Friday evening at the state insectary, where attendants were pleasantly entertained by the office force. Mr. Frederick Maskew, in charge of the insectary, explained the beneficial labors of the vedalia, the hemencytus, anastatus, aphelinus, and others of the orchardists' friends, and said that for the past twenty-five weeks he had been sending out these soldiers of the pest crusade at the rate of a million and a quarter a week.

Horticultural Commissioners Organize.

On Saturday the last day of the session the horticultural commissioners met and organized as a state association. Roy K. Bishop, of Orange county, was elected president, and Earl L. Morris, of Santa Clara county, was chosen vice-president. Harry P. Stabler, of Yuba county, who had previously declined the nomination of president, was made secretary. An executive committee was appointed by the chair to map out work for the association. Santa Rosa was selected as the next place of meeting, and the second Monday in October as the time.

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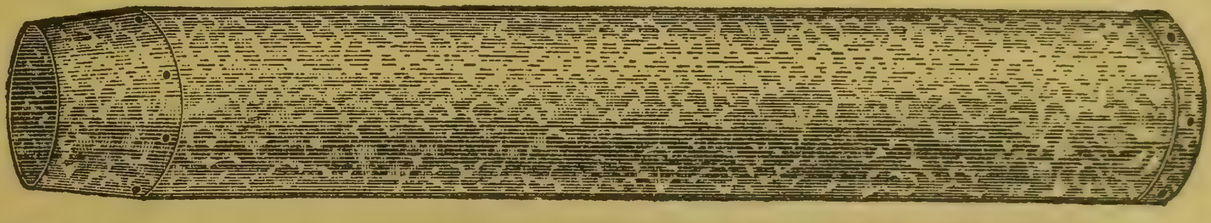

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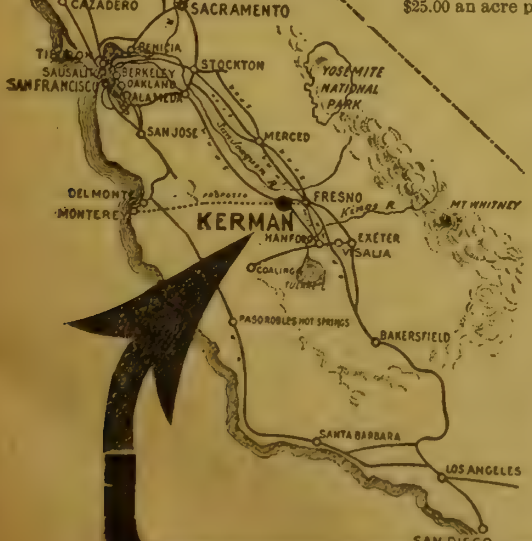

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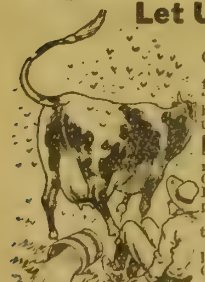

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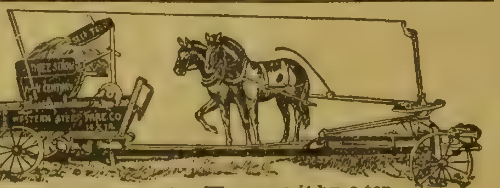

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FEEDING COTTONSEED MEAL.

Editorial in Experiment Station Record.

THE injurious effect which often follows the feeding of cotton-seed meal to certain kinds of live stock has been a subject commanding much attention from the experiment stations almost from their establishment. The loss which has followed cotton-seed meal feeding, especially with pigs and calves, has detracted greatly from the use whih could be made of this exceptionally rich material, and has made a better understanding of its physiological effect a matter of the greatest importance. For obvious reasons it has been recognized as one of the live problems of the stations in the Southern States, and the desirability of a wider and more safe utilization of this home product has lent a special zeal to the investigation. It has been made a prominent project under the Adams fund at a number of places.

These studies have been pursued from the standpoint of the chemist, the veterinarian, and the animal feeder. Chemical investigations have been made to discover if possible the character of the toxic body, and extracts of various kinds have been examined as to their composition and their toxicity. The symptoms of affected animals have been extensively observed; and a great variety of feeding experiments have been made with different mixtures and methods of feeding, in the attempt to get a clue to the nature of the difficulty and the practical means of avoiding or overcoming it. It has been variously ascribed to the lint, the oil, the high protein content, to a toxalbumin or toxic alkaloid, to cholin and betain, to resin present in the meal, and to decomposition products.

But despite the amount and diversity of the study, the cause and nature of the toxicity have continued to baffle investigators, and the problem has been greatly confused by variations in the toxicity or an entire absence of it, difficult to account for on the ground of individuality of the experimental animals. At an interesting stage in the study it would be found that the animals did not seem to be seriously affected by eating the meal in considerable quantities, and in certain localities injury was far less prevalent than in others. These things have served to interrupt the investigations, to make the point of attack more difficult to discern, and to lend complexity to the whole problem.

It is a matter for congratulation, therefore, that the cause of the poisoning and the reason for the variation in this respect now appear to be explained by studies which have been going on in the Bureau of Animal Industry of this Department, under Dr. John R. Mohler, and are now announced in a preliminary way. The laboratory and pharmacalogical studies have been conducted by Dr. Albert C. Crawford, who in an article which has just appeared describes the method of procedure which was followed in studying this problem, and presents his deductions as to the causative agent.

To the surprise of many, Dr. Crawford finds the poisonous principle not to be an alkaloid, and probably an inorganic rather than organic body—a salt of pyrophosphoric acid. Phosphoric acid has long been known to be present in cotton-seed meal in considerable quantity, and has been suggested as having a possible relation to its toxicity; but the methods of study followed have not been such as to bring out this relationship or lend support to the hypothesis.

Dr. Crawford's results seem conclusive, and are supported by a large amount of data from a systematic series of laboratory studies and physiological tests. The findings have been confirmed by feeding experiments with pigs, carried out by the Bureau, which are not presented in the preliminary paper. These feeding and pathological studies, together with the laboratory investigations, are to be published later as a bulletin of the Bureau. The preliminary notice is issued at this time because of the interest in the progress of the work which has been manifested by several of the experiment stations now engaged in studying the problem. The present account is sufficiently detailed and comprehensive to indicate the character and scope of the investigation, and it will make it possible for other investigators in this field to redirect their studies and to co-ordinate them with those of the Bureau.

Starting with the product which would be digested by the animals, that is, the extract prepared by digesting cotton seed with pepsin and pancreatin, the extract was concentrated and studied in its toxic effects on rabbits. Whole cotton seed of known origin was used in a number of cases, which was first ground and extracted to remove the fat. The same variations in toxicity which had been noticed in other experiments were encountered. It was found that while the seed from Upland cotton was quite generally poisonous to animals, that from certain Sea Island cotton contained so small a quantity of the poisonous principle as to be practically harmless. The toxic effect of the Sea Island seed, however, was greatly increased by heating, indicating that if in the treatment of the seed at the oil mills the temperature rises high the poisonous principle is developed. This is due to a conversion of part of the orthophosphoric acid into the pyro form, a reaction familiar to chemists.

This explains in an interesting way the differences which have been observed in the meal from different mills. Several experiment station workers have expressed the belief that the process of manufacture often has an important relation to the poisonous properties of the seed. At one station pigs were fed continuously and heavily on cotton-seed meal from a nearby mill without the slightest injury being apparent, but when

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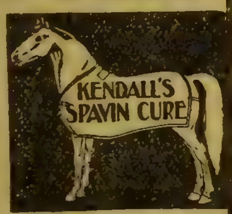

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a change was made to a lot of meal shipped in from an adjoining state cases of poisoning soon followed. Less easily explained is the observation of Dr. Crawford that Sea Island seed grown in Florida proved poisonous even without heating, approaching in this respect certain varieties of the Upland cotton. This remains for further investigation.

In the study of the extract containing the digestive products, it was found that lead and copper acetates precipitated a toxic agent which gave the usual symptoms of cotton-seed meal poisoning when fed to rabbits, while the filtrate from this precipitate remained inactive. On decomposing the lead precipitate with sulphuretted hydrogen and concentrating in vacuo, a red gummy material was obtained which fed to rabbits produced an intense gastro-enteritis and induced death in about an hour. From this material crystalline needles were obtained after standing about eight weeks, but these crystals proved physiologically inactive, while the gummy matrix continued to produce the poisonous effects, suggesting that the active principle was an amorphous body One after another suspected compounds were eliminated from consideration and the active principle was shown not to be a toxalbumin, a glucosid, and probably not an alkaloid. But it yielded precipitates with ammonium molybdate, magnesia mixtures, and the acetates of such metals as lead, mercury, and cadmium, indicating the presence of some form of phosphoric acid, which ultimately proved to be the case. The substance responded to reactions for pyrophosphoric acid, which is known to have poisonous properties, and is a soft glassy mass crystallizing only at low temperature and after months of standing.

(Concluded next Week.)

. A CORRECTION.

In the illustrated article on Dutch Belted Cattle which appeared in last week's Cultivator we described particularly three young animals just brought to this state by A. M. Mitchell and Sons of Redlands. This stock was brought from New Jersey by Mr. Mitchell and he proposes to secure some of the finest of this striking breed to be had in the East. The illustration and some of the facts given were very striking and indicated the worth of this breed, but in the article in question we made the mistake after naming Mr. Mitchell and Sons, of referring to them as the "Millers" and again referring to "Mr. Miller." This, of course, was a typographical error, the name Mitchell being made "Miller," which some might have taken to mean that there were two different breeders referred to by the article. Another point which might have been misunderstood was that made in referring to the capacity of one Dutch Belted cow exhibited at the World's Fair at Chicago, as being "sixteen quarts every day in the year for six years." Strictly, of course, such a statement could not be true, but we take it for granted that readers understood that sentence to mean that the average of this great cow was sixteen quarts daily.

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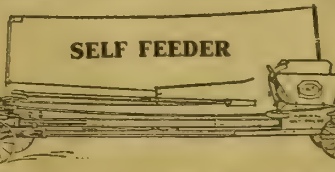

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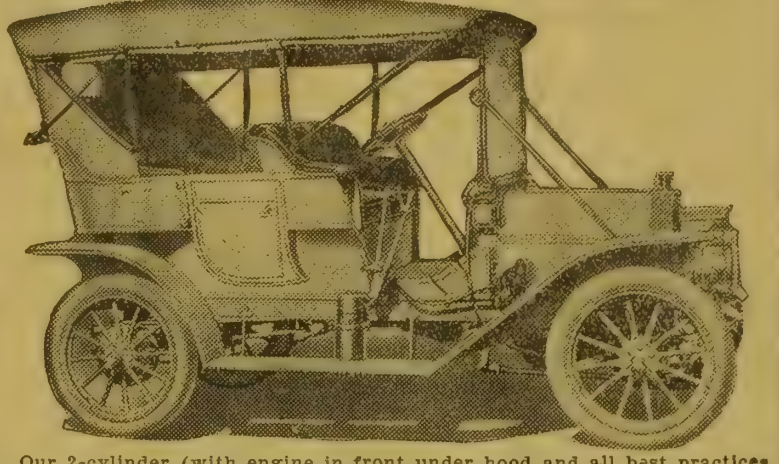

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Small Fruits and Vegetables

THIS MONTH.

THIS is a difficult month to grow plants from small seeds. Some gardeners will plant lettuce, radishes and other small plants in soil which has not been mulched or fertilized with coarse manure for years, and expect the seeds to come through the crust which forms after sprinkling and do well. Best results cannot be secured by such a plan. If a fine mulch can be had or well rotted manure be spaded into the soil, it is possible that seed may be started now, but that will require care and shade given by muslin cover or frames on which old sacks have been tacked so as to prevent crust from forming.

Sow radishes, lettuce, beets, onions, cauliflower and cabbage seed, and plant green and lima beans. Tomato seed for winter crop may be planted now. Of course, it goes without saying that a patch of green corn should be planted almost every week for some time yet. In addition, the corn planted earlier should be given plenty of water until the roasting ears are off.

Fight the aphis and the bugs persistently. They quickly accomplish the ruin of young plants.

GROWING SQUASH.

THE principal reason for getting a good stand of squashes is in the rapid growth of the young plants to aid in combating the squash borer and beetle. At least a dozen seeds should be placed in one hill, so as to be sure of a good stand and afterward thinned to at least three plants after the beetle season is passed, and more room is demanded by the young plants for growth. The seeds should be planted not over three-fourths to an inch in depth, and distributed about the hill, and covered with finely pulverized soil.

The field adjacent to the rows of plants should be cultivated deeply and the centers between the rows should be harrowed well to keep down the weeds until the vines cover the surface. They should be cultivated deep and often, and the surface about the hills raked over well with a garden rake.

At the last cultivation, which is made after the vines have a good start, a good quantity of soil is drawn with the hoe well up over the roots and stems of the plants, preventing materially the destruction from borers, which work in the root and stem of the plants. Frequent dustings of stove soot, air-slacked lime and plaster of Paris mixed, is a good preventive for the attacks of the beetle. This mixture should be lightly sprinkled when the dew is on. The large gray squash bug must be picked off to prevent further destruction.

Additional fertilizer in the form of nitrogen can be added profitably by applications of nitrate of soda worked in for several inches adjacent to each hill during the summer cultivation. One-third of a pound at each application is about right, and may be made at the time of thinning, at the time the plants are budding, and when small fruits are setting. This will insure fuller matured specimens, dry and sweet, and with hard, thin shells, indicating better keeping qualities.—Southern Fruit Grower.

HOW TO FERTILIZE STRAWBERRIES.

Strawberries delight in a rich soil, and respond readily to liberal application of fertilizer. While paying crops can be grown on good ground without any fertilizer, a liberal use of fertilizer will greatly lessen the tendency of the fruit to run down in size—a desideratum greatly to be desired by the grower.

Stable manure is an excellent and complete fertilizer, but few growers have it, or can procure it in sufficient quantity. It is best applied the year before and the ground planted to corn or potatoes, and kept well cultivated and rigidly clean.

The first essential is the proper selection of soil. The kind of soil is not so important as the fact that it should be free from insect pests and reasonably free from weed seed. To this end, select a piece of ground that was in cultivated crop last year, and which received good attention. It should be reasonably level so as to retain its fertility, but it may slope in any direction, but an eastern or southern exposure will ripen the crop a few days earlier. If you have plenty of stable manure and can get it on the ground and turned under without making the setting of the plants too late, put it on. Should you not have enough manure to make a liberal application, put it on thinner so as to cover as much ground as possible, because stable manure is an excellent medium for the life of bacteria which render plant food available in the soil. Put a jointer on the plow and turn the manure under well.

It is well to remember that stable manure is organic fertilizer and, excepting that part which liquifies by means of soaking rains, it is not immediately available as plant food until the weather gets quite warm and decay sets in; until then it is too raw and indigestible for the use of the plant. But this difficulty can be easily overcome by the use of a high grade commercial fertilizer.—Green's Fruit Grower.

IRRIGATING SUGAR BEETS.

The U. S. Department of Agriculture, through the Irrigation Investigations, has recently issued a practical bulletin on Irrigation of Sugar Beets, by F. W. Roeding. It is compiled from data gathered from all parts of the West where sugar beets are grown, and describes in detail the preparation of the land, methods of irrigating, culture, crop rotation, cost, etc.

This bulletin is known as Farmers' Bulletin No. 392, and may be had free of charge upon application to the U. S. Irrigation Investigations, Berkeley, Cal., as the Department is anxious to place it in the hands of as many California irrigators as possible.

The success attained in the growing of sugar beets in Colorado, Utah, Idaho, and California, where the irrigation of beets is practiced, leads to the conclusion that large areas can be devoted to the culture of the sugar beet and that this industry will help greatly in the development of the immense tracts now being brought under irrigation. This development can be greatly promoted by the adoption of the best methods of applying water to the beet fields, and this bulletin is prepared for the purpose of supplying information as to these methods.

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Winchester, Riverside county, is harvesting a large grain crop.

The Ornamental Garden

THIS MONTH.

THOSE who like large crysanthemum blooms should watch closely at this time. Suckers should be kept off and large side branches removed so as to leave only a limited number of buds. Of course many prefer the slender stalks with a larger number of flowers and are not particular as to size. These need not be so particular in the removal of side branches. The rose garden which is not in a prominent place may be deprived of the usual irrigation in order to force a heavy bloom later in the fall. Further treatment in order to secure these magnificent fall blooms will be given in the first issue in August.

The seed of eucalyptus and acacias and many other ornamental trees, may be sown this month. Owing to their rapid growth, it is yet a little early to start bluegums; they would become too large before time for planting in the open ground next spring, but varieties which are not so strong growing may now be put in seed-bed flats. Pansies and stocks for winter bloom may be sown; also sweet peas for the late flower season.

Later planted gladiolus are now in bloom, but the earlier have seeded and are anything but handsome with their dry stalks. The seed stalks should be cut off and the soil be allowed to dry somewhat so as to ripen the bulbs. These may be taken up the last of the month and stored for fall or early winter planting. Those which are still blooming should be given abundance of water. Shasta daisies likewise require a large amount of water if they are to be kept up to their finest bloom. To make long stems with large flowers requires plenty of water and a little fertilizer.

Bermuda grass is now spreading rapidly and should be raked with short rake and cut to prevent rooting in the lawn.

Callas and iris may be dug and sub-divided and planted in beds. Carnation and hydrangea cuttings may be made at this season or later. Partially ripened shoots are best for this. Amaryllis belladonna are now dormant but the time is approaching when they should be mulched and the soil kept fairly moist.

In California there seems to be little use for potted plants though more are used than formerly. This is a good season to consider the beauty of these plants and by cuttings or seeding plants provide for the future. A lath house is easy of construction and in it a few pots and hanging baskets may be filled so as to add a world of beauty to the porch. A bright colored geranium, common as it is, makes a handsome ornament when in bloom on porch rail or pedestal.

In the matter of irrigating the lawn and shrubbery, it must be borne in mind that it has been a long time since a heavy rain. This means a long distance down to permanent soil water. A light sprinkle does not begin to reach to this deeper moisture, and lack of thrift is manifested in the plants. It is a good plan to make a deep furrow around plants one wishes to especially favor, and let the hose trickle here for an hour or two and in some soils for several hours, and then deep culture with mulch later will do the rest.

GARDEN NOTES.

The grass should be kept neatly trimmed, whether the lawn be large or small. The lawn is more attractive if all shrubbery be planted at the side or in the rear.

The beauty of a place is enhanced if all fences are covered with vines. Or, if possible, replace the fences with hedges.

All unavoidable unsightly places, such as wood or barn lot or chicken yard should be screened by vines or shrubbery, burning bush being excellent for this purpose.

Before barns or other out-buildings trees make a beautiful screen.

Walks should be kept in repair and should be preferably of cement.

Waste papers should never be thrown outside, but should be burned. Tin cans and other refuse that cannot be burned should be kept in barrels and later hauled away. Nothing is so unsightly as a litter of tin cans in back yard or alley.

Wood ashes make an excellent fertilizer, and can be sifted on the lawn every few days. The grass receives the benefit and the back yard is spared the unsightly ash pile. All table and kitchen refuse, except what is fed to pigs or chickens, should be burned in the stove.

Special effort should be made to keep barns and outside closets in sanitary condition, as the deadly fly breeds in both places.

Alleys and streets should be kept clean and all weeds and grass cut several times during the season.

Curbings add to the appearance of the street and should be put in whereever possible.

Streets should be kept in better condition.

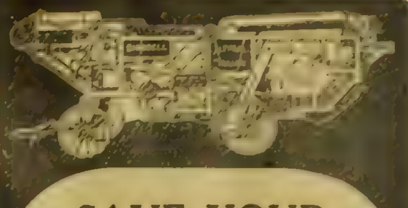
Never throw a paper, envelope or sack down when walking along the street. This should be impressed upon children.

Where fences have been removed, pedestrians should be careful to keep to the walk. Cutting across lawns or walking on grass plots between curb and walk makes unsightly paths that mar the beauty of well-kept lawns.—Coleman's Rural.

TO DESTROY CUTWORMS AROUND SWEET PEAS.

Make a rather strong suds with laundry-soap. Pour suds along row of peas, watch the ground closely while the suds soak in and you will be astonished to see how quickly the worms will come to the surface. Gather them into a small pan of the suds and they will soon die. Repeat this every morning or as often as you can and the worms will soon be destroyed. Soap-suds will not injure the sweet peas. Any suds left from the wash will do, providing no washing compound has been used in the water—Woman's Home Companion.

To preserve cut flowers, at the same time save changing the water, fill the vase two-thirds full of clean sand. Stick your roses or other flowers so they will remain just as you put them; then add water and see how much longer they will keep fresh. Sometimes the stems of roses and carnations will root in the sand.



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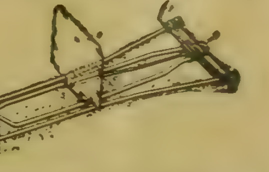

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Drainage of the Sacramento.

This issue of the Cultivator gives attention to the great work contemplated in the lower Sacramento river. Those who have taken the steamship ride from San Francisco up either the Sacramento or San Joaquin have been impressed with the thousands upon thousands of acres of rich land useless because of the winter overflow. Some of these lands have been reclaimed, and in their reclamation the channels of the rivers have been narrowed until the overflow on other lands and upon the upper river sections has caused vast damage to fertile acres. The need of correcting these conditions has been appreciated for years, and the best engineers of the country have studied the problem. Some years ago it was suggested that the work be taken up by the government, but as the land in question had been transferred by the government to the state of California, it was felt by many that the state should shoulder the burden. A compromise has been finally effected whereby the preliminary work is to be joined in by both state and nation.

In addition to this initial work which is described and illustrated by maps, other projects are contemplated. One feature of the great Valley development is the Orland project in Glenn county; another is the Iron Canyon project which will give water to thousands of acres in the vicinity of Red Bluff. This latter is a second unit of the plan which was encouraged by former Secretary of the Interior Garfield. It was placed by Mr. Garfield on the waiting list and it was declared to be the purpose of the Service to take up the development as soon as funds became available. The preliminary work, however, has been discontinued by Secretary Ballinger. While there will be delays and possibly many years will elapse before this great work will be completed, it is started and means much for the welfare of our state.

Learning to Do Things.

A novel feature of college work is being carried on by the Department of Biology of Pomona College located at Claremont, Los Angeles county. This is not a part of the regular college course or rather gives no credit to the student carrying it, and being only a side issue, does not have general attention from the students, but those who have taken it—we note there are fourteen in the first year's course—are those who have felt the need of such training as is given by practical work in the breeding and care of plants. The college is in the center of one of the most highly developed horticultural regions, and yet in that section there is no other opportunity for training such as is offered by this department. The principal element in the course is the manual training which comes through the actual handling of the plants, mixing of soil, planting of seed, making of cuttings, resetting of young plants, grafting, and all kinds of practical work connected with plant life. We note one of the mottoes of the department as follows: "A man cannot most intelligently and efficiently direct others in any great industrial work, without understanding to a finish the basic scientific principles underlying that work, and without being able to do the things himself."

Recreation.

This is the season when a few people whose homes are in the country and nearly all people whose homes are in the city, take a few days off for a change of scene and for a rest to gather strength for the remainder of the year. We say a few of the rural people and many of the city people because, from our observation, such is the case. The farmer of today realizes more than the farmer of 25 years ago that the privileges and rights of the city people belong to him, but there are still many who believe that from 300 to 365 days in the year belong to the daily grind of farm work. Many such have little patience with vacations. This belief is so strongly intrenched that one of the great churches of this country has taken steps to impress upon the farmers the need of giving to their young people occasional rest days and holidays. Young people observe these privileges which are usually taken by city people, and that is one of the attractions which they look at when they think of city life. The farmer lives in the open air which is what the city people usually choose when they take their recreation. This makes some farmers think that they are having what the city people consider a vacation. This is true, but rest is not simply loafing and allowing the muscles to rest, but in its highest and best sense is securing a change of scene, and a mental simulus which will aid one to take up the ordinary daily labors with more vim and vigor.

California offers so many magnificent outing opportunities that the farmer should see that his family is given the privilege of their enjoyment. All will return more tired possibly than on leaving home, but with greater appreciation of the home life and a determination to do better work.

Twenty Millions for Reclamation.

The signing of the irrigation measure passed by the recently adjourned congress, which authorizes a $20,000,000 bond issue, funds from which are to be used in completing various reclamation schemes, will mean much to arid sections of the West. Those in charge of the Reclamation Service built large, and the fund from the sale of public lands which was to carry on the work was not up to expectations and was insufficient to carry out these great plans. It is fitting and exhibits good financial sense for the Service to complete this work. There has been complaint that some of the schemes have not worked out according to the dreams of those who planned them. This may be true. In fact, it would be marvelous if every dream of the bigger thinkers of the country should be realized to its fullest, but every industry the country over, manufacturing as well as agricultural, will be benefited by the development of these great stretches of arid land, and we hope continued extension of these systems will be maintained.

Eighteenth National Irrigation Congress.

The official call for the Eighteenth National Irrigation Congress announces that the meeting will be held in Pueblo, Colorado, September 26th to 30th, 1910. The call outlines the personnel of the attendants, number of delegates from different bodies, the program, scope of the National Irrigation Exposition held in connection, and general information. The program will include addresses by experts on irrigation and forestry, by foreign delegates, governors of states, industrial leaders, officials of large irrigation enterprises, and others. The exposition held in connection with the congress has much wider scope than any former exposition of the kind. There will be exhibited machines and devices for developing power used for irrigation and drainage, metho of transmission of power, all kinds of devices for raising water, distributing water and cultivating irrigated lands, plans and models of existing or contemplated irrigation or drainage systems, products of irrigated lands, and other exhibits interesting to irrigators. R. H. Faxon is secretary of the local board of control.

Lemon Freight Rate.

The fight before the Interstate Commerce Commission by lemon growers of California to retain the former dollar lemon rate, is succesful, and the decision of the commission sustains the contentions of the growers. It will be recalled that immediately after the increase of the lemon tariff by the Payne-Aldrich bill, the railways combined on an increase of the freight rate on lemons of fifteen cents per hundred pounds. This taking advantage of the tariff by the railways created indignation the country over and precipitated the fight which has just been won by the growers.

Two New Stars.

The forty-six stars in the American flag will be increased by two representing Arizona and New Mexico, on the flags floated above government buildings after July 4th, 1911, although it is possible that the convening of constitutional conventions and the adopting of constitutions satisfactory to the majority of the people, will delay actual statehood until 1912. The enactment which makes states of these two territories has been duly signed by President Taft, and the fight for statehood which has covered a period of years is now won.

The farm is the basis of all industry. For many years this country has made the mistake of unduly assisting manufacturing, commerce and other activities that center in the cities, at the expense of the farm.

Agricultural News Notes of the Pacific Coast

Northern California

Oroville's Water Carnival held last Friday and Saturday proved a complete success.

Ferndale is getting ready for the agricultural fair which will be held in September.

Bartlett pears are now going forward from many shiping points of the Sacramento Valley.

The first load of 1910 barley delivered to the warehouse at Gridley, Butte county, was on Saturday, June 11th.

The Department of Agriculture is spending from $15,000 to $20,000 per year on the plant introduction work at Chico.

The ferry service between Vina and Corning has become congested by the large amount of business and more complete service is demanded.

The Maywood Packing Co. at Corning, Tehama county, was unable to secure help to cut and dry all its apricots, and some were shipped to Red Bluff.

P. H. Dorset who was formerly connected with the government plant introduction garden at Chico, is giving a month's inspection to the work at the garden.

The fruit growers near Forestville, Sonoma county, recently met and made plans to enter a winning exhibit at the Apple Show to be held at Sebastopol in August.

Sacramento Valley Irrigation Co. has let the contract for the mammoth siphon which will conduct the irrigating water under Willow creek near Willows, Glenn county.

In spite of certain withdrawals from the fruit alliance of Eldorado county, the standardizing scheme is winning new friends there and the arrangement will be carried through.

A fruit growers association has been formed at Lincoln, Placer county, and the following are directors for the first year: A. Isaak, Fred Clark, S. W. Hinkley, F. H. Fowler and N. Labrie.

Dr. William H. Boynton, a veterinarian formerly with the University of California, has gone to the Philippines to find if possible a cure for rinderpest, a serious disease affecting cattle of the Islands.

The campaign against glanders at Anderson, Shasta county, has been most vigorous and it is now reported that the place is freed of any possibility of infection. All public watering troughs were disinfected and kept dry for two weeks.

The barley fields of Sutter county are turning out remarkably well this year, some showing as high as twenty sacks to the acre, ranging from that down to twelve sacks. Some exceptional lands along the river have yielded thirty sacks.

The government experiments in rice culture near Red Bluff, Tehama county, on land which is underlaid with hardpan, have proved the adaptability of the section to rice. Twenty-seven varieties have been planted and nearly all are making vigorous growth.

Central California

Santa Clara Valley apricots brought better prices in the Eastern markets than for years.

The Farmers Union of Santa Clara Valley is very active, and new members are being secured.

The raisin market has been somewhat stimulated by the injury to the crop caused by hot weather.

Turlock Melon Day is the latest festival announcement, and some day in August is to witness the feast.

The Santa Clara County Poultry and Pet Stock Association is planning big things for its fall show beginning October 4th.

Sunflower Creamery at Porterville paid for May 28 cents for butterfat, while for June the price ran close to 31 cents.

The horticultural commissioner of San Joaquin country has liberated a large number of parasites of the apricot brown scale.

The Fresno Republican estimates that the damage to growing grapes by the heat wave late in May will be at least ten per cent.

Recent heavy purchases in prunes have greatly reduced the holdover crop. It is reported that future California prunes are strong at 4¼ to 4½.

An orchardist at Porterville, Tulare county, claims he has the largest single irrigation plant in the state. It lifts sufficient water for 120 acres.

The Pajaronian estimates that Newton pippins will be full crop, bellflowers 15 per cent short, apricots half crop, cherries half crop, all berries big crop.

Owing to a break in the Turlock Irrigation District canals, $25,000 worth of repairs were necessary, and some farmers were without irrigating water for four weeks.

A fire started amongst the leaves in a field near Porterville in the hope of destroying a horde of grasshoppers, escaped from control and destroyed thousands of acres of pasture.

Stock growers of Stanislaus county report ravages of lung worm in young calves three to four weeks old. It has been especialy bad on calves pastured on marshy or swampy land.

A convention of California Mutual Fire Insurance Companies was recently held in San Jose. These companies, which are organized by farmers, are now carrying over $14,000,000 of insurance.

A tract of 22,000 acres west of the river and near Dos Palos, will be subdivided, irrigated and colonized by the same company which is handling the Kerman lands. The tract will be supplied from the canals of the San Joaquin and Kings River Canal and Irrigation Co.

A rancher at Terra Bella, Tulare county, has had excellent results in poisoning squirrels by use of small cans of water which are exposed for a number of days until the squirrels form the habit of coming to them to drink, then they are filled with poisoned liquid.

Southern California

Ventura county apricot dryers paid 12½ cents per box for pitting.

Coachella Valley has shipped between 40 and 50 cars of cantaloupes.

Ventura county dried apricots will be ready for packing about July 15th.

A Riverside alfalfa grower has just cut 76 tons of hay from one 40-acre field.

Some growers are manifesting faith by planting almonds in Coachella Valley.

The Yucaipe Valley is now harvesting a large quantity of red astrachan apples.

The biggest threshing machine in Ventura county has just been built at Oxnard.

The Colorado River was discharging at Yuma on June 18th 47,700 second-feet.

Elks from Ventura county will distribute 500 sacks of walnuts at the Detroit convention.

Hay balers are busy at Moorpark, Ventura county, and a big amount of hay is being put up.

The Hemet Cannery ran day and night on apricots, putting up nearly 10,000 quart cans daily.

The Imperial Valley may exhibit a car of its finest cotton at various southern state fairs this season.

With lemons selling in the eastern markets at $7.00 and $8.00 lemon growers are wearing a broad smile.

The Lompoc Valley, Ventura county, produces 90 per cent of the mustard consumed in the United States.

Irwindale, Los Angeles county, orange growers are discussing the formation of a new orange growers association.

The farmers club at Mound, Ventura county, is one of the live ones of the state and held an interesting meeting last week.

Some packing houses have been compelled to put Valencia oranges "through the sweat" in order to secure return of good color.

The first shipment of Malaga grapes from Coachella Valley this year was on June 17th, two days earlier than the first shipments of last year.

Articles of incorporation have been filed for the Call Lemon Association. The membership is composed of lemon growers at Corona, Riverside county.

County horticultural commissioner Wilsie of Imperial county is serving notices calling for the eradication of Johnson grass, wild asparagus, cockle bur, sunflower, dodder and morning glory.

The Imperial Valley water situation seems to be cleared somewhat by the action of Congress in granting to President Taft $1,000,000 with which to begin control measures for the Colorado river.

The Orange County Dried Fruit Association has determined to hold the bulk of its fruit at 11 cents, though members who may wish to sell at 10 cents per pound are permitted to sell at that price. The same association is hoping for a $30 price per ton on pits.

The Coast

Wool growers at Asotin, Washington, are holding at fifteen cents.

Farmers at Walla Walla, Washington, are losing much because of lack of labor.

Preparations are under way for the Cherry Fair to be held this month in Salem, Oregon.

Two hundred acres of unimproved land at La Grande, Oregon, recently sold for $20,500.

An exceedingly large pack of salmon will be made at the canneries at Astoria, Oregon.

A herder with a band of 2,000 sheep has been lost in the mountains near Trinidad, Washington.

The benefit of reforesting is beginning to be seen in some of the forests of Washington.

A careful canvass of the apple orchards in the Hood River section indicates a bumper crop.

Steady rains from the middle of last June were of great advantage to farmers in eastern Washington.

North Yakima, Washington, is now shipping thousands of pounds of large cherries to all sections of the East.

The fourth annual demonstration trip over the Northern Pacific left Pullman, Washington, July 5th.

Thirty thousand acres will be reclaimed at North Yakima by the drainage of the Yakima Indian Reservation.

Wool growers at Pendleton have in storage 500,000 pounds of wool. A little of the finest has been sold for 17⅛ cents.

Ranchers near Casa Grande, Arizona, are now running five gasoline traction plows and planting grain and sorghum at the rate of 40 acres per day.

A large tract of land is being reclaimed near Tucson, Arizona, by an immense pumping plant. Alfalfa and garden truck are to be the principal crops raised.

Farmers at Athena, Oregon, are making a united campaign on the "Jim Hill" mustard. It is feared this pest will take the grain fields of the state if not brought under control.

Walla Walla, Washington, has a well which is flowing with such strength that it throws an eight-inch column of water 112 feet into the air. The flow aggregates about 2,224 gallons a minute.

Farmers near Vancouver, Washington, are organizing to protect their lands from delinquent tax sales made before they acquired the land when they were the property of the Northern Pacific Railway.

The alfalfa growers of Yuma Valley, Arizona, have formed an association looking to the best interests of the alfalfa fields, the first move to be made toward the destroying of dodder which is infesting the fields.

A big irrigation scheme which has long lain dormant in the Methow-Columbia Valley section, has been revived and it is rumored capitalists will furnish funds to complete the canal which will reclaim about 11,000 acres.

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THE CHICK'S "LAYETTE."

By Mrs. Frank Metcalf.

WHEN a human baby is looked for what a dainty "layette" is made ready for its reception; softest of flannels, the daintiest of laces and embroideries are purchased and made up into the most fetching little garments for the rosy limbs of the darling to come, and every mother knows that even the very best does not seem half fine and soft enough for the tender blossom, so loved and so frail. Do we realize that we should give some of this care to the tender baby chicks our greed for gold brings, un-mothered, into this harsh, cold world? Sometimes we do, but often we seem indifferent to their most crying needs, and they suffer and die, simply for the want of just the simplest necessities, when a little forethought, might have given them comfort, and ourselves profit. O! the pity of the helpless little downy chicks, smothered in stuffy hot brooders, or shivering in cold and filthy, lice infested ones! What a cry of misery goes up from millions of these every year! Better never to have been hatched at all, than to be so tortured. If they cry and peep for a fresh drink or a crumb to stay their hunger, how often they are met with the impatient remark: "O! You little yelping torments, there, take that and shut up!" and a little sour dough, or stale water is carelessly thrown at them, and the door slammed without even looking to see whether a prowling cat or dog, or larger chick, crowd them away, or not. This way of caring (?) for chicks is all too common, and is one of the reasons so many declare that "chickens don't pay." They do if they have even half a chance, but cannot live and thrive upon even California air, without a little encouragement.

But this is not what I started out to write about, getting ready for the clutch to come from the incubator, in the hope that I might help some little chicks to a better time during their short lives. It doesn't take much to make a clutch of baby chicks comfortable and happy in this favored clime. Back east, where we have to guard against rains, hail and snow it is something of a task to get ready for a hatch of early chickens, but here, and now, at this time of the year especially, all we need to do is very simple. Suppose we expect 100 chicks. We may make us a long box with a lid hinged on, out of a packing case, maybe twenty inches or two feet wide, and at least six feet long, for every 50 chicks. Eighteen inches deep will do nicely, and a square may be cut out near the center of one side for a door, for which a wire screen door may be made on a frame, to open from the outside. Eight inches square is convenient, but a smaller one will do for a while, and a second opening cut for a window which may be used for a door later if one wishes.

Now, nail a strip of half-inch stuff, one inch wide and twenty-four inches long, six inches from the floor at each side of one end. For the hover, make a frame that will drop onto these cleats loosely, out of light lumber, say one inch stuff, and onto this frame tack a cloth with a pleat in each corner, so it will sag down in the center touching the chicks' backs. This cloth may be of almost anything, and I find the bottom parts of old outing flannel night dresses about as good as anything, as it is soft and sleazy, and allows the insect powder I like to use, to sift through nicely, being better than new material in this respect. A cushion of the same material may be loosely filled with straw for the covering, or old feathers may be used, not a thick, heavy pad, but just a soft, loose one, that will not weigh down on the tiny backs. A strip of the cloth should be left to hang down in front of the frame, and a good-sized crack left along the back for air as the cleats stop that up along the sides, unless a strip is hollowed out for that purpose before they are nailed on, which would be a good thing to do (by the way this strip makes such a fine hiding place for mites, that it should be hollowed out, by rights, so as to be more easily sprayed.) A board to fit up in front of the frame should be used for a week, so as to keep the chicks in at night, until they learn the way themselves. I prop this board up with a brick, usually, and leave it on a slant for them to run up and down on afterwards.

Now go to the barn and gather up the fine alfalfa leaves and put a layer all over the floor of your box about two inches deep, and make a flat nest of soft straw under the frame hover, hollowing it slightly in the middle, like a nest. Put in a drinking fountain (not in the nest, but in the box) which may be a pound baking powder can, with a nail hole or two near the edge, inverted over a tin lard pail lid, for the first few days. This should be set up a little, or they will scratch it full of chaff first thing. Take an old pie pan and fill it partly full of chick grit, or gravel, and sprinkle the feed used on this. I use cracked wheat, with a ground onion, hard boiled egg and dry bread mixture, as for turkeys, the first few days sometimes, and sometimes bird seed, with fresh green stuff like lettuce or Swiss chard in abundance always. The chicks are taken from the incubator when twenty-four hours old, in the heat of the day, and placed in the box where the sun can shine on the lid. This keeps them warm enough, as a rule, but if they seem chilly, I put them all into the straw nest and cover them snugly for a couple of hours, then let them out to eat again before nightfall.

A box like this will accommodate 50 chicks nicely, and for 100 two or three may be provided, as many maintain that 50 is too many to keep in one. Keep the chicks in the boxes for three or four days, then make a wire run for them so they may learn to go out and into their own box, and after they are three weeks old they will always come back to their own coop, no matter how far away they wander during the day. Soon we will find them roosting on the top of the hover, and then they may be either moved to larger coops, or the frames removed and small roosts put in place of them. I do not move them into larger coops until they are quite well feathered, and consider this the nicest and easiest way of raising chickens I have ever tried. Keep cracked wheat in the pie pans always and water in a shady nook near by.

Now, all the above applies to new brooders, but many times we have old ones on hand which we wish to use; in this case, we must proceed just as though that particular old brooder had been exposed to all the diseases that chicks fall heir to. Take a good big pan of wood ashes, if you have them, and throw into the floor of the old brooder, then pour on a kettle of boiling water and scrub, and scrub. Every crack and cranny must be cleaned, and then well rinsed out, after which it should be simply soaked in distillate, top, bottom and sides, outside as well as inside. This must be done a day or two before the chicks arrive, and it should be left open to the sun and air, meantime. It wouldn't hurt to just pour a little more distillate into the corners after it has gotten thoroughly dry, for luck. Now, proceed just as with a new brooder, but watch it a little closer for mites. If hens are used for brooding, clean the coops used for them exactly the same way and burn all straw nests, and soak the nest boxes between each hatch with distillate besides spraying the house where the hens set once a week, at the same time dusting the setters, of course covering, or removing them while the spraying is going on. To put a hen and chicks into a last year's coop without a thorough cleaning is to condemn the innocent chicks to a slow death of torture 99 times out of 100. Don't do it! Dust the hen when you take her off the nest, and grease the heads of the baby chicks and pick off the large gray lice you will surely find on most of them. Care for them kindly and lovingly, and they will pay.

POULTRY QUERIES.

Incubator Turks.

Several weeks ago Mrs. Metcalf told the readers of the Cultivator not to set turkey eggs in an incubator. I must give you my experience with the same in Antelope Valley. On May 6th of last year I bought 100 turkey eggs, which were transferred three times in shipping. I hatched in the Cyphers Incubator 70 per cent of them. This year I have purchased 50 breeding hens and from the first 173 eggs laid by them I hatched 155 good, strong poults, of which I have raised in the brooder to two months old 140. Have now 700 young turkeys and more than half were hatched by the incubator, I find it more successful here than by hen turkeys for they kill many of their young by stepping on them. I have also hatched 400 chicks and lost but six. I have not had any sickness nor mites amongst my fowls since coming here two years ago. The place is ideal for poultry and we have a good market, being near the gold mines. I trust this will help some one.—Alice E. Lynn, Rosamond.

Unfertile eggs are preferred for the kitchen because they are supposed to retain their freshness longer than fertile ones.

ARTIFICIALLY INCUBATING TURKEY AND DUCK EGGS.

I saw Mrs. Metcalf's article in the California Cultivator on artificially incubating turkey eggs, and while I did not follow her advice, about dipping the eggs, I will give my experience, as it may be beneficial to some one else. I was operating my machine at the time her article appeared, and it very much discouraged me, but as it was my first attempt I continued just the same as for chicken eggs. After testing out I had 61 turkey and 16 duck eggs, and I hatched 55 turkeys and 12 ducks. I am very well satisfied with the results.

Now I operated my machine exactly the same as for chicken eggs, only continued 28 days instead of stopping at 21. I do not know why so many make failures unless it is because they do not air the eggs enough. I am a great advocate of plenty of fresh air. I commence airing the eggs five minutes the fourth day of incubation and gradually increase to thirty-five minutes at the last of the hatch, that is the twenty-sixth day, as I did not turn them after that.

I use no moisture in my machine, I think there are more chicks drowned in the shell by too much moisture than die from lack of moisture. Where too much moisture is supplied the air space will be very small and the chicks die in the shell for want of room and air. If the air cell is watched in an egg that is incubating under a hen, it will be seen that about one-third of the egg is an air cell at the time of hatching. That is one thing I watch very closely, to be sure to have a good large air cell, and I turn the eggs carefully by hand so as not to jar and tear any of the minute blood vessels loose. It is a mistaken idea some people have that because a turkey egg is larger than a chicken egg it does not require as high a degree of heat to hatch it, but it takes 103 degrees, the same as for chicken eggs. I have never tried raising the little poults in brooders, but I think I shall next year. There is one thing sure, the turkey hens on this farm are going to lose some of the pleasure of breaking eggs and leaving their nests, as I shall use the wooden hen hereafter.—Mrs. G. W. Halstead, Visalia.

BREEDING UP.

Undoubtedly the poultry industry of the state will, at the next meeting of the legislature, receive an appropriation for the purpose of promoting it We hope this will be the case, and that a good share of this appropriation will be given to the poultry department of Iowa State College to be invested in stock of the best quality obtainable, from which eggs and stock will be sold to farmers at nominal prices. Unless the farmer is able to purchase stock which represents the best utility quality of the breed, he would better put enough into pure bred to furnish a thoroughly good pre-potent male, to be mated with eight to ten of his best females, rather than to buy a trio of birds whose only merit is that they have no alien blood. A good high-grade bird is better than a pure-bred cull. With from five to seven crosses of a pre-potent male bird of the same breed and variety on the best of the farm flock each year, we have a flock practically pure bred, a flock which will breed true to type, with more vigor than we would have had from a flock of cheap pure breds. It is most encouraging to have a flock improving with each generation, and to gradually grow into the pure-bred business is better than to jump into it with small working capital. In grading up, however, one must resolutely resist the temptation to use his own best males. Use the best pure-bred male you can possibly afford each season; the same bird should be vigorous enough to use two seasons if mated to vigorous hens. What we want on the farm is tested breeders. Our State College would do more to improve the quality of farm poultry by selling to the farmers birds kept through one breeding season, and known to be pre-potent along utility lines, than by sending out hundreds of bulletins. The value of any breed rests absolutely on its utility qualities; the fancier only takes up a breed when its value has been demonstrated as a producer.—Wallace's Farmer.

GARGLING A FOWL'S THROAT.

A subscriber wishes to know how to gargle a fowl's throat, having been told that a remedy for roup was to gargle the throat of the fowl with equal parts of peroxide of hydrogen and water. To "gargle a fowl's throat" for roup, inject either peroxide of hydrogen or kerosene into the nostrils with a medicine dropper and hold the throat so the bird is unable to swallow. Let the medicine remain in the throat long enough to penetrate, then turn the bird head down to throw out the wash.—Wallace's.

Concrete floors are not to be recommended for the poultry house unless they are covered to a depth of four to six inches with dry soil or sand. In the first place, they are cold in winter, and in the second place, a fowl flying from the roost and lighting on a hard concrete floor is liable to injure its feet and bumble-foot is almost sure to ensue. Even a board floor should be coyered with dirt or sand or deep litter.—Commercial Poultry.

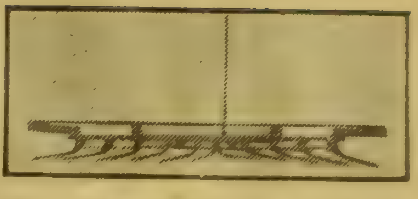
People who use an incubator, says the Minnesota Experiment station, should not remove chicks from the machine until they are thoroughly dry. Colds at this time are likely to result in pneumonia and death. The brooder should be heated to ninety or a hundred degrees before the chicks are placed in it, and kept at about that temperature for a week at least, when the temperature may be gradually lowered to a degree that barely renders comfort.

Grain and other hard food may be scattered on the ground, but soft food should be given on boards, or better still, in troughs or vessels in which the fowls cannot place their feet, and which can be cleaned easily at frequent intervals.

See that each bird that is to be used in the breeding pens is in the best of health, with bright eye and red comb. It is a waste of time and effort to try to breed strong chicks from emaciated breeding stock.

Stuffing, poultrymen assert, never did make hens lay, as it makes them fat, and lazy birds never were noted for their laying qualities.

Big, heavy, slow-going hens ought not to be kept in the same pen with the quick, nervous ones. The hens that get around lively will eat the others out of house and home.



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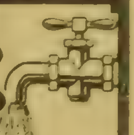

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Most apricot dryers have closed for the season.

SACRAMENTO IMPROVEMENT.

(Continued from Page 3.)

Views Along the River

lands to the value of $75,018.50 have been bought and paid for. The city of Sacramento is expected to furnish the sum of $75,000, and it is understood that the Board of Trustees will submit a proposition for a bond issue of this amount.

The map on the cover shows in a very clear and effective manner the work to be performed with the million dollars which the engineers of the United States War Department expect to expend on the Sacramento river below Rio Vista. The map shows the present very narrow channel of the Sacramento river for about fifteen miles above its mouth, and the broad flood channel to be provided by the work contemplated. It shows also the broader channel of the San Joaquin river, and affords a comparison that demonstrates the inadequate width of the present channel of the Sacramento.

The map shows three streams converging above Rio Vista. These are the Sacramento (old river), Steamboat slough and Cache slough. The two stream first named are channels of the main Sacramento river; the third is the outlet of the Yolo Basin, through which passes the greater part of the flood water originating above the mouth of the American river. These deliver into the single channel at Rio Vista all of the waters of the Sacramento river system. A simple comparison of their combined channel width with the channel width below that point, as shown by the map, is sufficient to demonstrate the necessity of the work now proposed.

The utter inadequacy of the present channel below Cache slough is perhaps most conclusively shown by a comparison of the actual flood capacity with the volume of water to be handled in this portion of the river. The present capacity, upon the basis of the flood of 1909, is 165,000 cubic feet per second. The Debris Commission estimates that had the waters of this flood been confined above, the flow would have exceeded 500,000 cubic feet per second. In other words, the flood of 1909, if confined to channels above Rio Vista, would have necessitated a channel three times larger than that now existing below that point.

Obviously, an enlarged outlet channel must be provided before the river above Rio Vista can be successfully controlled.

A progressive improvement of the entire river looking to ultimate complete control of flood stages is the aim of the engineers of the War Department, who have proposed this as the initial unit. This greater project, plans and estimates for which are now nearing completion, will be recommended to the Chief of Engineers about July 15th next. It contemplates the ultimate enlargement of the river below Cache slough to care for a maximum discharge of 600,000 cubic feet per second. The river from Cache slough to the mouth of the Feather will be enlarged to carry 100,000 cubic feet per second. All flood waters above the American River will be carried through a by-pass in Yolo Basin, thereby enabling the Sacramento to carry with safety the floods of the American river.

This great project is the final result of studies of the Sacramento river problem extending over a long period of years. Since the great floods of March, 1907, and January, 1909, the best authorities have agreed that a by-pass channel through the Yolo Basin must be a part of any effective river control project that is practically feasible.

It may be that some will still believe that the channel of the river proper should be enlarged to carry the floods and a by-pass channel eliminated from the plan. Any controversy on this point would affect in no way the project for the widening of the river's mouth, for, whatever may be the means employed to carry the flood waters to Rio Vista, an enlarged channel capacity must be provided below that point.

The American river at maximum flood, delivers into the Sacramento more water than the Sacramento channel below Sacramento will carry in its present condition. The American river at high flood has carried 120,000 second feet for a period of one day, and the flood capacity of the Sacramento river below this city is only 80,000 cubic feet per second. It is evident, therefore, that before the flood waters of the American river can be passed through the Sacramento to Suisun bay one of two things must be done: The levees must be raised or the channel enlarged.

Under the present conditions the surplus waters of the American at high flood, flow into the American and Yolo Basins. The reclamation of these basins will add hundreds of millions of dollars to the wealth of the territory immediately tributary to the city of Sacramento. Such reclamation will render it necessary that adequate provision be made for taking care of the American river flood, and this river widening project offers the most natural and the most economical method of proceeding to do it.

As already explained, it is the intention to follow the Rio Vista improvement with a progressive upstream development of the channel, designed to solve the problem of the American river flood.

The work to be performed on the lower river is designed to increase the flood capacity three and one-half times. The present channel, which carries at high flood 165,000 second feet, is to be enlarged ultimately to carry 600,000 second feet. It is not the intention to provide the maximum channel at this time; necessary lands will be acquired and the levees moved back, and critical points will be dredged to an extent that will afford an immediate increase in flood discharge to about 250,000 second feet with a flood level at Rio Vista about two feet below that of January, 1909. Further flood capacity will be provided by dredging as the progress on improvements to the river above may require.

The present channel below Cache slough has a width at the narrowest places of from 700 to 800 feet. Bakers Point, where a part of Sherman Island projects into the stream, is the critical point, the distance between levees at this place being only about 700 feet. This projection is to be cut off, the levees moved back. This and similar treatment at other points, will correct the alignment and increase the width. The channel to be formed will have a uniform width from Cache slough to Suisun bay of about 3,000 feet; when fully developed by dredging, it will have at flood stage a uniform depth of about 35 feet.—Great West.

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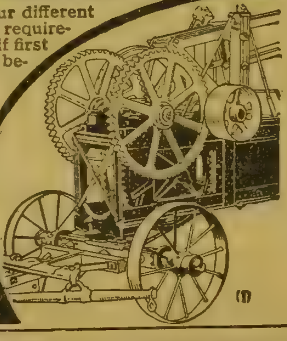

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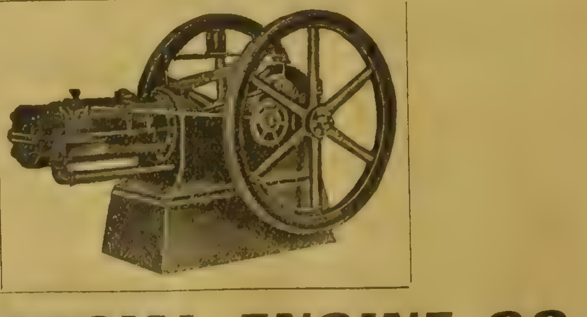

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Bees and Their Care

LESSONS IN BEE-KEEPING FOR BEGINNERS.

By J. G. Gilstrap, Inspector of Apiaries, Stanislaus County.

Second Article.

I IMAGINE the occasional farmer who may have tried some of the hints which appeared in the Cultivator of June 16th, may have decided opinions as to the kind intentions of the bees he has been working with. I imagine some may be saying: "Those bees are the crossest creatures I ever saw. They seem to be busy but I can't fool around them much. Sting? Well, yes. They are as vicious as the old colony they came from over there in that old barrel. That barrel has had bees in it for well nigh five years, but I thought when the bees got in a new movable frame hive they would not be so cross. Are all bees that cross?"

Now, there is a great difference in bees, as there is in chickens, cattle, or even people. The beginner will notice that his bees which have been so active in defending their own hives, are usually dark and rather small. They are more irritable than many other varieties except possibly Cyprians. The gentlest bees to handle are the Italians. Of these there are three distinct strains; the golden which are very yellow, the three banded, and the leather colored. Each strain has its advocates, but in my experience I find little difference. There are many varieties, which I will not now consider.

As to bees which have been kept in an old barrel or makeshift hive, I will say that they should be transferred to a regular frame hive and be re-queened. This will make them more gentle and far better workers and in such condition that you may expect a fair margin of profit if well cared for.

To Transfer.

There are two general plans of transferring, but of course circumstances will govern the details of working them out. Procure a good movable frame hive and have it ready for the first pleasant warm day when the wind is not blowing. Bees are less liable to be cross on such a day. Remove old barrel or makeshift hive from its stand and place the new one on stand. Before beginning work with the bees, smoke gently to keep them quiet. Now open the hive or box at the top and blow smoke freely from above. Continue until bees have been largely driven out of hive, and scrape and brush in the top of the new hive or in front of it. The frames may be lifted out of the new so as to attach the old comb to them. Now lay the lid or cover on the new hive and remove side of old hive or barrel so as to expose comb. Then cut out combs carefully, one at a time, and lay on smooth board, laying frame over combs to measure, cutting so as to fit frames, using only straight worker comb. Do not use drone comb which will be readily distinguished by the cells being much larger than that of the worker comb—we will in future paper speak more particularly about drones and drone comb. Also use care in transferring these combs, that very little honey is transferred. I usually put all or nearly all honey in a vessel to be taken away—always bearing in mind that transferring should only be done when there is a fair honey flow.

When the comb is cut so as to fit the frames it may be temporarily held in place by coarse thread or even wrapping twine wrapped around the comb and frame several times. Then lift the frame with comb suspended in it and put in place in the new hive. Continue this until the good comb has been used, filling each frame neatly. Be sure not to leave scraps and waste honey lying around.

The other plan which will give two swarms is to drive out bees with smoke as above until they are well out of old box. But few need remain, and after getting them into the new hive carry old hive away and close all exits except room for about two bees at one time. Everything working favorably, the young bees in the hive may be transferred later when all old brood is hatched and the young queen they are supposed to be raising is laying usually in about three weeks.

Again, you may remove the bottom board from the old box hive when you have the bees all drummed out into the new. Use queen excluding zinc on the top of the new hive, closely fit and set old box with combs and brood on this zinc. The queen is now held below and the brood will be better hatched. In either case, I would advise placing one or two frames of brood in the new hive. If you have succeeded in getting the queen into the new hive, the swarm will almost surely remain though sometimes they will leave.

Arrange to have the new hive in partial shade, with little sun. It is also most desirable that this work be done when there is a honey flow.

Introducing New Queen.

Some difficulty may attend your efforts to make two swarms out of one, especially if the bees in the old hive have lately swarmed. In that case, the number of bees is small, and of course there is a bare possibility that they have not raised their young queen, or she may have been lost in the mating. If you have transferred the bees according to the second plan and wish to re-queen with Italian, proceed as follows:

About seven to ten days after driving bees out of old hive, introduce the young queen by releasing in the entrance of the old hive, following her with a little smoke for a few minutes, which plan very seldom fails, or if preferred you may place the usual mailing cage, after removing the perforated metal at the end, in such a way between the combs or frames at top of hive, that the bees in the hive will remove the "good candy" and release the queen—usually in one to three days.

If your queen is not in a mailing cage, you may cut a piece of wire screen four inches square, ravel out wires from all four sides three-fourths inch or a little over, turn these raveled ends all down in such manner as to form a box or lid. Select a frame or comb of sealed brood with a little honey. Turn this screen cap over your new queen, sealed brood and a little honey, and gently press the protruding ends of the screen wire into the comb, just leaving free room for the queen and hatching bees to crawl around under the screen.

(Continued on Page 23.)

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The "Manual Training Schools"—a group of five buildings—located on Vermont Avenue, between 42nd and 43rd Streets, Los Angeles, are being covered with Pioneer Specification Roofing.

The Hollywood Union High School buildings are also being covered with the same material. The Manual Training Schools require 100,000 square feet of Roofing, and the Hollywood Union High School, 40,000 square feet.

Pioneer Roofing is manufactured by the Pioneer Paper Company of Los Angeles, California. Roofing Booklet and samples of Roofing, will be sent by the Company upon request.

DIVIDEND NOTICE. THE SAVINGS AND LOAN SOCIETY.

(Member Associated Savings Banks of San Francisco.)

101 Montgomery St., Cor. Sutter St.,
San Francisco.

For the half year ending June 30th, 1910, a dividend has been declared at the rate of four (4) per cent per annum on all deposits, free of taxes, payable on and after Friday, July 1st, 1910.

Dividends not drawn become part of deposit accounts and earn dividends from July 1st.

Money deposited on or before July 11th will earn interest from July 1st.

WM. A. BOSTON, Cashier.

For Work or Play

The backbone of our business is the manufacturing of Tents, Awnings, Irrigation Hose, and of heavy canvas construction in general. However, we serve the public in many ways: We supply you with hunting, fishing and camping goods, with outing apparel, storm clothing, sweaters, bathing suits, with flags, bicycles and kodaks.

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Young Stock For Sale
M. Bassett *Hanford, Cal*

Queries and Replies

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Pruning Orange Trees.

Will it be injurious to prune orange trees seven years old at this time or two months later? They have been somewhat neglected and have some suckers and smaller branches near the ground which should be removed. —Subscriber, San Bernardino.

We would not wait two months to do this work, but remove suckers and any dead wood and projecting or useless branches at once. The sap of the summer flow which is strongest at this period of the year should be diverted into fruit bearing wood. Every day of a sucker's growth at this season takes from the vitality of the tree. In addition, some young fruit will be removed by cutting off side branches, and these should be taken off before they have acquired size.

Sub-irrigation.

How can I use porous drain tile for sub-irrigation? Wish to use them in strawberry patch. Would like to conduct from 200 to 300 feet. The fall is from ten to twenty feet. Will the water escape from the lower end? How much does it cost per acre? Is cement good?—Subscriber, Arroyo Grande.

We do not know of any successfully sub-irrigated orchards or gardens in California. Many attempts have been made and abandoned. The expense is very heavy, ranging well up to $300 per acre, and the life of the plant has always been exceedingly short. The trouble is caused by the filling of pipes or tile with rootlets of the growing plants. It would probably be longer lived where annual crops are grown, but with trees, two or three years sees its finish. We do not think our subscriber will be able to make it work, but if any others have had successful experience, we will be glad to hear from them through the Cultivator. Presumably the lower end will be closed so there can be no waste there.

Warts on Udder.

Can some reader tell me how to remove warts from udder and teats of cow and not diminish flow of milk?—I. D., Sultana.

The simplest remedy we have seen was given by Mrs. Sherman in a former Cultivator as follows:

"Use cold-pressed castor oil on the warts night and morning after milking. If there are some that hang by a small neck that can be clipped with sharp scissors, cut them off, one each day on each teat and touch the spot with lunar caustic."

Flavor in Pork.

We have pork which tastes of the barrel. The brine has been changed but does not seem to help. Meat is solid and of fine appearance. What will take out the undesirable flavor? —Subscriber, Conejo.

The query is of the class which only those who have had experience can answer. We would suggest as a preventive of a similar result with the next batch of pork that the barrels be thoroughly scalded out with live steam or with boiling lime water. Of course care should be taken to select a barrel which has not been used for substances which will impart flavor to the pork. The only remedy we can suggest is the possible help of soaking the pork for a short time in boiling water before using.

Winter Rhubarb.

If I. L. S., Porterville, will write giving us full name, we will be glad to mail the information asked. We cannot answer anonymous communications.

On Shares.

I rent a piece of land to renter who agrees to sow, cut, and haul four-fifths crop. I agree to haul my share and help him haul his. I am to have the pasture. The place is partly fenced. Who should herd the stock off it?—Subscriber, Hemet.

If the subscriber means estray stock which may roam upon the land, would advise him that the state law prohibits ranging of stock, and it will not be necessary for anyone to herd stock off the growing crop, but ask the proper authorities to care for it.

What To Plant.

My brother and I are new in California and wish to know what to plant at this time to mature for feed for man and beast.—J. E., Perris.

The garden page of this week's issue of the Cultivator will give an idea as to garden calendar. For stock feed it will be hard to say not knowing kind of soil or whether or not irrigation is possible. Sorghums pumpkins, or even Indian corn, beets, or other crops will be possible. If you can irrigate, run water enough to thoroughly soak the land, then give cultivation, and it is likely that one irrigation will be sufficient for pumpkins or sorghum. However, far better results will be secured by future irrigations.

Jimson Weed.

A subscriber has written to us asking as to any possible disposal of jimson weed for drug production. We know of no market for it, and ask subscribers who may have had experience to inform us.

Pruning Logans.

My loganberries are done fruiting. I will cut out the old canes. What shall I do with the long new canes? Vines are on a low trellis.—H. R. T., Pasadena.

One method would be to allow the new canes to grow as long as they will by the end of the season and in January cut them back to about a length equal to the distance apart between the plants. That is if the plants are six feet apart in the row, cut the canes back to six feet in length. Another method that will give more fruit bearing wood, is to cut them back as mentioned above, about the middle of July, which will cause them to throw out laterals which should be allowed to grow at will until fall. In January cut these laterals back to about twelve inches. The fruit will be borne upon these laterals next season.—Q. A. L.

Pear Scab.

Am sending badly scarred pears. Can anything be done to prevent further damage, or may damage already done be remedied? Will it affect price? Will canners buy such fruit?—Subscriber, San Francisco.

This was referred to the Pathological Laboratory and Mr. Clayton O. Smith writes: "This is a case of pear scab. See Bulletin No. 163, California Experiment Station.

The remedy for this disease is spraying with Bordeaux mixture, 5-7-50. The work to be most effective should be done before the individual flowers can be detected, but while the buds are unfolding. Two sprayings at this time, about 10 days apart, give very satisfactory results."

The fruit will certainly not be as saleable as the fair fruit.

Poultry in California
Written by Geo. H. Lee

I have traveled in every state in the Union, in Canada and Mexico, studying poultry raising, observing local conditions involving success or failure. No one section has every advantage, none is handicapped by inevitable failure; yet, taking it all in all, there is no spot on the western hemisphere so especially and generally favored as Southern and Central California for success with poultry.

I have been at it for twenty-five years as a breeder; as a manufacturer fifteen years, and for easy money in poultry culture this section is a top-notcher. Not for the invalid transient who expects a comfortable livelihood from a few chickens without work; not for the inexperienced city dweller, operating a country ranch with incompetent help, but for the lover of poultry, who uses his head and his hands, there is no possible failure.

Always a good market and high prices, with demand always exceeding the supply; with a superb climate and all-the-year-round natural breeding season; no wintry blasts to devitalize the stock and curtail the egg yield; with no vermin that cannot easily be kept under control; all that is needed for success is proper stock, houses, food and utensils, a few simple rules for guidance and a lot of good horse sense.

I think so much of California and of its future as a poultry state that I have just opened at Los Angeles a branch of our Omaha house and before fall will establish also a factory for the manufacture of Mandy Lee Incubators and Brooders, now sold all over the world. Later I expect to make it my permanent home.

Anyone calling at our Los Angeles office will receive courteous treatment and gratuitous advice on poultry subjects. Ask for card entitled "Pointers for Californians." Also free poultry books.

Geo. H. Lee Company

Makers of Lee's Lice Killer, Lee's Egg Maker, Germozone, etc. Also Mandy Lee Incubators and Brooders, the kind that makes not only the biggest hatches, but brings the healthiest, hardiest chicks.

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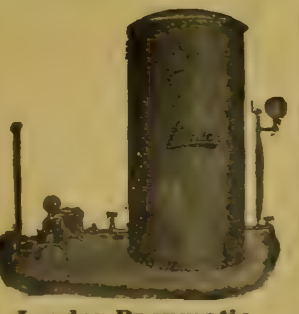

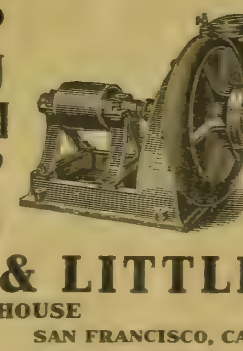

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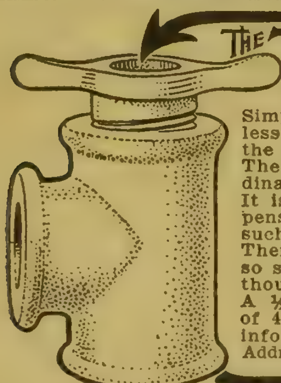

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A ½-inch valve sent post paid upon receipt of 40 cents. Quantity price, circular and full information upon request.

Address **George C. Roeding, Fresno, California**

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Household Department

THE RURAL TELEPHONE.

The neighborhood not far from here,
Put in a telephone last year;
Farmers built a rural line.
Instruments all "talked up" fine
All you had to do was ring,
Every bell went ting-a-ling;
One for Swanson, two for Boggs,
Long and a short for Mrs. Scroggs,
Every neighbor had his call,
Twist the crank and that was all.
Mighty nice when work was through,
To gossip for an hour or two
With your neighbors, one by one.
Somehow in a week or two
Troubles dark began to brew.
Farmer Jones got fighting hot,
Heard Scroggs calling him a sot;
Scroggs also got angry, too,
Heard Smith telling what he knew.
Smith heard Jonson telling lies,
Paid him off with two black eyes;
Johnson heard young Ezra Boggs
Underbid him on his hogs;
Every time the signal rang
To the 'phone each farmer sprang.
Slyly grinned and softly took
The receiver from the hook;
Boggs overheard a sneaking churl
Making love to his best girl.
Women, too, were in the muss,
Raised a most tremendous fuss.
Everyone from Scroggs to Jones
In glass houses throwing stones.
Now the line has silent grown,
Wires rusted, poles o'erthrown.
Twenty friends are deadly foes,
Each one full of griefs and woes,
Each too mad to speak a word,
'Cause the things they overheard.

—Chicago Inter Ocean.

THE NOTORIOUS JUMPING FROG OF CALAVERAS COUNTY.

IN compliance with the request of a friend of mine, who wrote me from the East, I called on good-natured, garrulous old Simon Wheeler, and inquired after my friend's friend, Leonidas W. Smiley, as requested to do, and I hereunto append the result. I have a lurking suspicion that Leonidas W. Smiley is a myth; that my friend never knew such a personage; and that he only conjectured that if I asked old Wheeler about him it would remind him of his infamous Jim Smiley, and he would go to work and bore me to death with some exasperating reminiscence of him as long and as tedious as it should be useless to me. If that was the design, it succeeded.

I found Simon Wheeler dozing comfortably by the barroom stove of the dilapidated tavern in the decayed mining camp of Angels, and I noticed that he was fat and bald-headed, and had an expression of winning gentleness and simplicity upon his tranquil countenance. He roused up and gave me "Good Day." I told him a friend of mine had commissioned me to make some inquiries about a cherished companion of his boyhood, named Leonidas W. Smiley—Rev. Leonidas W. Smiley—a young minister of the gospel, who he had heard was at one time a resident of Angels Camp. I added that if Mr. Wheeler could tell me anything about this Rev. Leonidas W. Smiley, I would feel under many obligations to him.

Simon Wheeler backed me into a corner and blockaded me there with his chair, and then sat down and reeled off the monotonous narrative which follows this paragraph. He never smiled, he never frowned, he never changed his voice from the gentle-flowing key to which he tuned his initial sentence, he never betrayed the slightest suspicion of enthusiasm; but all through the interminable narrative there ran a vein of impressive earnestness and sincerity which showed me plainly that, so far from his imagining that there was anything ridiculous or funny about his story, he regarded it as a really important matter, and admired its two heroes as men of transcendent genius in finesse. I let him go on in his own way, and never interrupted him once.

"Rev. Leonidas W.—H'm, Reverend Le—well, there was a feller here once by the name of Jim Smiley, in the winter of '49, or maybe it was the spring of '50—I don't recollect exactly, somehow, though what makes me think it was one or the other, is because I remember the big flume warn't finished when he first come to the camp; but, anyway, he was the curiousest man about, always betting on anything that turned up you ever see, if he could get anybody to bet on the other side; and if he couldn't, he'd change sides. Anyway that suited the other side would suit him—any way, just so's he got a bet, he was satisfied. But still he was lucky, uncommon lucky; he most always come out winner. He was always ready, and laying for a chance; there couldn't be no solit'ry thing mentioned but that feller'd offer to bet on it, and take ary side you please, as I was just telling you. If there was a horse-race, you'd find him flush or you'd find him busted at the end of it; if there was a dog-fight, he'd bet on it; if there was a cat-fight, he'd bet on it; if there was a chicken fight, he'd bet on it; why, if there was two birds setting on a fence, he would bet you which one would fly first; or if there was a camp-meeting, he would be there reg'lar to bet on Parson Walker, which he judged to be the best exhorter about here; and so he was, too, and a good man. If he even seen a straddle-bug start to go anywhere, he would bet you how long it would take him to get to—to wherever he was going; and if you took him up, he would foller that straddle-bug to Mexico, but what he would find out where he was bound for, and how long he was on the road. Lots of the boys here has seen that Smiley, and can tell you about him. Why, it never made no difference to him—he'd bet anything—the dangdest feller. Parson Walker's wife laid very sick once for a good while, and it seemed as if they warn't going to save her; but one morning he come in, and Smiley up and asked him how she was, and he said she was consider'ble better—thank the Lord for his inf'nite mercy!—and coming on so smart that with the blessing of Prov'dence, she'd get well yet; and Smiley, before he thought, says, 'Well, I'll resk two-and-a-half she don't, anyway.'

"This-yer Smiley had a mare—the boys called her the fifteen-minute nag, but that was only in fun, you know, because of course she was faster than that—and he used to win money on that horse, for all she was so slow, and always had the asthma, or the distemper, or the consumption, or something of that kind. They used to give her two or three hundred yards' start, and then pass her under way; but always at the fag-end of the race she'd get excited and desperate-like, and come cavorting and straddling up, and scattering her legs around limber, sometimes in the air, and sometimes out to one side amongst the fences, and kicking up m-o-r-e dust and raising m-o-r-e racket with her coughing and sneezing and blowing her nose—and always fetch up at the stand just about a neck ahead, as near as you could cipher it down.

"And he had a little small, bull-pup, that to look at him you'd think he warn't worth a cent, but to set around and look onery, and lay for a chance to steal something. But as soon as money was up on him he was a different dog; his under-jaw'd begin to stick out like the fo'castle of a steamboat, and his teeth would uncover and shine like the furnaces. And a dog might tackle him and bullyrag him, and bite him, and throw him over his shoulder two or three times, and Andrew Jackson—which was the name of the pup—Andrew Jackson would never let on but what he was satisfied, and hadn't expected nothing else—and the bets being doubled and doubled on the other side all the time, till the money was all up; and then all of a sudden he would grab the other dog jest by the j'int of his hind leg and freeze to it—not chaw, you understand, but only just grip and hang on till they throwed up the sponge, if it was a year. Smiley always come out winner on that pup, till he harnessed a dog once that didn't have no hind legs, because they'd been sawed off in a circular saw, and when the thing had gone along far enough, and the money was up, and he'd come to make a snatch for his pet holt, he see in a minute how he'd been imposed upon, and how the other dog had him in the door, so to speak, and he 'peared surprised, and then he looked sorter discouraged like, and didn't try no more to win the fight, and so he got chucked out bad. He give Smiley a look, as much as to say his heart was broke, and it was his fault, for putting up a dog that hadn't no hind legs for him to take holt of, which was his main dependence in a fight; and then he limped off a piece and laid down and died. It was a good pup, was that Andrew Jackson, and would have made a name for hisself if he'd lived, for the stuff was in him and he had genius—I know it, because he hadn't no opportunities to speak of, and it don't stand to reason that a dog could make such a fight as he could under them circumstances if he hadn't no talent. It always makes me feel sorry when I think of that last fight of his'n, and the way it turned out.

(Continued next Week.)

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This Is a Little Ad
Isn't It?
But your future education is no small matter if you get it at the
Napa Business College
Write Box 216, Napa, Cal.

Merced is shipping great quantities of tomatoes every week.

HOMELY HINTS.

When canning fruit, wind a towel wet in cold water around the jar, and it will not break.

If the casters on any article of furniture run hard, just put a few drops of oil on them and note the result.

Place a basin of vinegar on the stove when you are boiling cabbage or onions, and the odor of the vegetables will not be perceptible.

A burn will never blister if a flour paste (raw) is quickly applied to it. One recommendation of this simple remedy is that the ingredients—flour and water—are always to be had.

To prevent cake sticking to the pan, grease the latter in the ordinary way, then dredge lightly with flour, and shake out all that does not adhere.

When making starch, add a little salt. It prevents the irons sticking, and the clothes will look nicer when ironed. A bit of paraffine has a good effect, also.

To remove fruit-stains from table-linen, spread the linen over a wash-tub and pour boiling water through the stains until they disappear, which will be in a very few minutes.

A wee bunch of cotton, pressed firmly into each finger and thumb-tip of kid gloves, will prevent ripping, and postpone the day of shabbiness almost indefinitely. Just a bit of cotton only is needed.

Before baking potatoes wash them well and rub them over with pure, fresh lard. It will make the skins come off easily when baked, and we think them much nicer. Potatoes may be pared, then buttered and baked, and and will have a delicately brown skin.

If green cucumbers are put into a brine before preparing for table use there will be no danger that the little ones will get sick because of eating them, and they are really much nicer. Try this plan, and see if you do not agree with me.

SWEET PICKLES.

"Place six hundred small cucumbers in crock and pour one cup salt over them, then cover with boiling water. Repeat three days, then place in weak vinegar five days. Then pour over them the following: two ounces allspice, two ounces almond, cloves, celery and cinnamon, three pounds of brown sugar, four pieces of green ginger, four pieces horseradish, two onions, two green peppers, vinegar to cover."

WASHING WHITE SILK GLOVES AND HOSE.

Wash in warm soapsuds, rinse and hang in a dark room. The best time to wash them is at night; they will be dry by morning. It is the light which turns them yellow.—Woman's Home Companion.

An enterprising exchange has a long catalogue for work for rainy days; but, then, who wants to work on rainy days?

The chanticleer hat proves that not only must city folks look to the farmyard for their living, but also for their styles.

The young fellow who told his best girl that she was the apple of his eye, doubtless meant that she was a "Seek-no-further."

Always stand up for the right, but do not wear yourself out with worry because you can not turn the world and make it over in a day.

Many a woman as sharp as a brier at the bargain counter, has been obliged to confess that she was fooled in the selection of a husband.—From May Farm Journal.

Is he well-trained?" asked the man.

"Pretty well,' replied the boy.

"What breed is he?

"Dunno."

"Hasn't he a pedigree?"

The boy hesitated. Then a great light came over him.

"Oh, no." he said. "It was cut off by a street car when he was a pup." —Denver "Post."

Have a purpose. No one ever reached great things without trying for them. Thoughts of what is great, love for great ideals, daily acts done in a great spirit, prepare the hero's hour and bring it to him. Purpose makes or mars life. Purposelessness ruins life.

Don't let the back step be unsightly with swill pails, cat dishes and hen food, thus strewing food and attracting flies and disease. Cart away all the old cans, broken dishes, old coats and boots, from back places and yards.

After all it is the producing power of the farm that determines the boy in his going or staying. Show him that there's money in it, and he will stick to the old farm like a sand-burr to a sheep's tail.

Dolly—"No; I won't wash my face!"

Grandma — "Naughty, naughty! When I was a little girl I always washed my face."

Dolly—"Yes, and now look at it!"—Philadelphia "Inquirer."

Laughter is a good health builder. Give me an employe who loves to laugh, who enjoys a joke, who always sees the ludicrous side of things!

?

Interested in Poultry

If you keep hens the following offers must appeal to you, as they give you a chance to get a Large Lot of reading matter for a Low Price

Our Dollar Savers

Commercial Poultry 1 year (The only one of its class)	$.50
Northwest Poultry Journal (The leading journal north)	.50
The California Cultivator (You know it's O. K.)	1.00
Total	$2.00

Our Price only $1.70

Here's Another

American Poultry Journal (A live one.)	$.50
Poultrycraft (The leader in So. Cal.)	.50
The Cultivator (Still the best)	1.00
Total	$2.00

Our Price for All, $1.70

More Yet

Poultry (A big one and high class)	$1.00
Poultrycraft	.50
Commercial Poultry	.50
Cultivator	1.00
Total	$3.00

Look! Our Price $2.35

If you are already one of our subscribers send in the cash just the same and we will advance your subscription one year and give you a year each to the other magazines as per above offers.

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Why not avail yourself of this opportunity to get the best magazines at the low prices now given you.

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Send in your orders now. Address all orders to

Cultivator Pub. Co.
115 No. Broadway
Los Angeles, Cal.

Look Up

San Francisco and Los Angeles Produce Markets

Los Angeles Markets

LOS ANGELES, July 6, 1910.

Butter.

Butter holds same price on lower grades with a cent and a half raise on extras. Market very firm.

Price to trade 2½c in advance of the following Produce Exchange quotations:

Extras	31½
Firsts	29
Cooking	26

Cheese.

Northern fresh	17
Anchor, large	18
Oregon Daisy	18½
Domestic Swiss	23
Imported Swiss	30

Eggs and Poultry.

Egg market very firm with quotations on case counts at 26, but some holders demanding a cent above quotations.

Paying price f. o. b. L. A. is:

Local ranch candled	30
Case count buying price	26
Eastern fresh	26

Dealers pay for live poultry f. o. b. L. A.:

Hens, per lb	15@17
Roosters	10
Broilers	16@18
Turkeys	22@24
Geese	12
Ducks	14½
Pigeons, doz.	75

Live Stock.

The following quotations are f. o. b. Los Angeles, on all stock:

Hogs, 175 to 200 lbs	10¼
Prime Steers	5
Heifers	4@4½
Calves, per lb	5½
Sheep ewes, per head, shorn	4.00@4.50
Lambs, per head	3.50
Wethers, shorn	4.00@4.50

Potatoes.

Wholesale prices are:

White Rose seed	1.00
New potatoes, per ctl	1.00@1.15

Onions.

Wholesale quotations:

Australian Browns, per 100	1.75
Bermudas, sk.	2.25
Bermudas, crate	1.25
Silver Skin, per box	60
Garlic	8

Vegetables.

Wholesale quotations:

Asparagus	8@10
Artichokes, northern, doz.	50@90
Beets, sack	90
Beans, green and wax	3@5
Beans, Limas	12½
Brussels Sprouts, lb.	10
Bell Peppers	15
Green Chilis	14
Cabbage, per sack	1.00
Cucumbers, per box	50
Celery, doz.	1.10@1.50
Cauliflower, per doz.	1.10
Carrots, per sack	90
Cream Squash, per lug bx	1.00
Egg Plant, per lb.	14@15
Endive, doz.	40
Green Corn, box	60@75
Green onions, per doz. bunches	25
Horseradish, per lb.	25
Lettuce, choice, per crate	1.00@1.25
Leeks, per doz.	20
Mushrooms, bskt	75@1.00
Okra	15
Oyster Plant	25@30
Peas, per lb.	5@6
Parsley, per doz. bunches	25
Parsnips, doz. bunches	15@20
Radishes, per dozen bunches	10@15
Rhubarb, strawberry	1.00
Rhubarb, crimson winter	75
Spinach, per dozen	20
Summer Squash	25@30
Turnips, sack	90
Tomatoes, box	75@85
Water cress, doz. bunches	25@35

Citrus Fruits.

Valencias	3.00@3.50
Grapefruit	2.00@3.00
Lemons	4.00@5.00

Fresh Fruits.

Wholesale prices on the market are:

Apricots, per box	75
Alligator Pears, per doz.	4.00@5.00
Apples, Newtowns	1.35@2.25
Apples, W. W. Pearmains	1.50
Apples, New	65@1.75
Cantaloupes, ponies	1.65
Cantaloupes, standard	2.15
Cantaloupes, Jumbo	1.50@1.60
Cherries, white, lb.	9@10
Currants, crt.	1.50
Figs, box	75@1.00
Grapes, crate	1.00@1.25
Pears	1.75@2.00
Strawberries	5
Raspberries	5
Blackberries	4@5
Pineapples	10
Logans	4@5
Peaches, box	1.00@1.10
Plums, box	65@1.00
Prunes, box	1.25
Watermelons, lb.	2@2½

Dried Fruits.

Wholesale prices are:

Apricots	12
Evap. apples, fy, per lb.	8½
Peaches	7
Pears	12
Nectarines	10
Prunes	4@7½
Plums	12

Beans Dried.

Wholesale quotations:

Limas, per ctl.	4.75@5.00
Pink, No. 1	7.25
Black eyes	6.00
Lady Washington	4.75
Small white	5.00
Garvanzas	4.50
Bayous	6.50
Lentils	7.00

Nuts.

Wholesale quotations are:

No. 1 soft shell walnuts	15
No. 2 soft shell	10
Walnuts, budded	16
Almonds, IXL, per lb.	16@17
Pecans, polished	14@16
Peanuts ,Eastern	7¼@7½
Peanuts, Cal.	5@6

Honey.

Wholesale quotations:

Extracted water white	8½
Extracted light amber	7
Beeswax	30

Hay.

Buying prices f. o. b. cars L. A. are:

Barley hay	10.00@12.00
Alfalfa	10.00@12.00
Wheat hay	10.00@12.00
Tame oat	11.00@13.00

Grain.

Wholesale selling price f. o. b. Los Angeles:

Wheat, new per ctl	1.80@1.85
Kaffir corn	1.75
Corn	1.80
Popcorn, ctl.	3.00@3.45
Egyptian corn	1.80
White oats	1.85
Seed Rye	2.10
Seed Barley	1.35

Feed Stuff

Wholesale selling price f.. o. b., Los Angeles:

Cracked Corn	1.85
Cracked Wheat	1.95
Shorts	1.90
Bran	1.45
Oil cake meal	2.75
Feed Meal	1.90
Rolled Barley	1.35

San Francisco Markets

SAN FRANCISCO, July 5, 1910.

Butter.

Butter market is firm but at slightly lower quotations on extras than last week.

The official quotations of the San Francisco Wholesale Dairy Produce Exchange for today are as follows:

California extras, per lb.	28
California firsts	27½
California seconds	27

Cheese.

California flats, new	13@14½
Cal. Young American fy new	15@16

Eggs and Poultry.

Eggs remain as last week with firm condition. Storage are being taken out.

Official quotations of the S. F. Wholesale Dairy & Produce Ex. are:

Fresh ranch extras	27
Firsts	25½
Seconds	23
Thirds	20
Storage	25½
Hens, per doz.	5.00@10.00
Roosters, per doz.	5.00@8.50
Fryers, per doz.	5.00@6.00
Broilers	2.50@3.50
Geese	2.00@2.50
Ducks	4.50@7.50
Pigeons	1.50@2.25
Squabs	2.50@3.00
Belgian Hares, per doz.	3.50@6.00

Live Stock.

San Francisco prices gross weight:

Steers	3½@5
Cows and heifers	2½@4
Hogs	5½@9½
Calves per lb.	4½@6
Milk Lambs	6@6¼
Wethers No. 1, unshorn	5¾
Ewes No. 1, unshorn	5¼

Shorn sheep ½@¾ less.

Potatoes.

Wholesale market quotations:

River White, new, box	60@85
Garnet Chile, ctl.	90@1.15

Vegetables.

Wholesale quotations:

Artichokes	35@40
Asparagus, per box	1.00@1.25
Beans, string, per lb.	2½@5
Beans, Wax	6@8
Beans, Limas, sk.	50@60
Cucumbers, box	30@75
Celery, per crate	90@1.50
Chili Peppers, per box	65@1.00
Bell Peppers	6@7
Green Corn, sk.	1.00@2.00
Egg Plant, per box	1.25@1.50
Lettuce, per crate	4.50@5.00
Okra, lb.	12½@15
Peas, per lb.	3½@4½
Rhubarb, box	60@85
Summer Squash, box 25 lbs	50@65
Tomatoes	25@1.75
Garlic	2½@4

Onions.

New Red, sk.	1.85@2.00
Yellow, ctl.	2.00@2.10
Silverskins	1.90@2.15

Citrus Fruits.

Navels	1.50@3.00
Valencias	1.75@3.50
Grapefruit	1.00@3.00
Lemons	2.00@6.00
Limes	6.00@6.50

Fresh Fruits.

Apricots, canning, ton	20.00@25.00
Apricots, crate	50@75
Apples, new, box	35@1.25
Apples, Gravensteins	1.25@1.75
Newtowns	1.25@1.75
Crabapples	50@1.00
Apricots crate	60@75
Cherries, Oregon	75@90
Cantaloupes, ponies	2.00@2.25
Cantaloupes, Jumbos and st.	2.00@2.50
Figs, box	40@1.00
Huckleberries, lb.	20
Pears, large boxes	50@1.00
Peaches, box	75@1.25
Plums, box	25@60
Damson, bskt.	60@75
Tragedy Prunes, box	75@90
Blackberries	2.50@3.00
Raspberries, chest	4.00@6.00
Strawberries, Longw., chst.	4.00@5.00
Strawberries, Malindas	3.00@5.00
Strawberries, Banner	6.00
Grapes, crate	1.00@1.25
Logans, chest	2.00@3.00
Currants, chest	6.00@7.50
Pineapples, doz.	2.50@3.00
Watermelons, per doz.	2.00@3.50

Dried Fruits.

Santa Clara prunes	3½

½ cent premium for larger sizes.

Apricots per lb. Royal	9@10½
Peaches	5@5½
Apples, evap.	6½@8
Pears	5@7½
Figs	3¾@5
Nectarines	5@6
Plums	7@8

Futures on 1910—Apricots, 8¼@10; Peaches, 5@6; Prunes, Santa Claras, 3¾@4, ½ cent Prem.

RAISINS—1909 crop, f. o. b.; fancy seeded, 16-oz. cartons, 5@5¼c; do, 12-oz., 4½c; do, choice, 16-oz., 4½@4¾c; choice, 12-oz., 4c; 50-lb. boxes loose Muscatels, standard, 4-crown, 4@4½c; 3-crown, 3¼@3½c; 2-crown, 2½@3c; seedless Thompson, unbleached, 3c; do, bleached, 5@6c; Sultanas, unbleached, 2¼c; do, bleached, 4@4½c; Muscatels, unbleached, 2¼c; London layers, clusters, 2-crown, 85@90c; 3-crown 90c@$1; 4-crown, $1.30@1.50; 5-crown, $1.75@2; 6-crown, $2@2.50.

Nuts.

Walnuts S S No 1	14@15
Walnuts, hard shell	13
Almonds '09 N P U	13
Almonds '09 Nonp	14½
Almonds I X L	14
Pecans	15@17
Chestnuts	14@15
Peanuts	5@6½

Beans Dried.

Limas	4.40@4.50
Pink	6.00@6.25
Black eyes	5.60@5.75
Small white	4.15@4.30
Large white	3.75@4.00
Kidneys	5.00@5.70
Garvanzas	2.50@3.25
Bayo	6.50@6.75
Horse beans	1.75@1.90
Cranberry	4.50@4.75
Red Mexicans	6.00@6.10

Hops

Hops, 1909 crop	12@17
Hops, 1908 crop	9@11

1910 contracts now being made at 12@15 cents.

Honey.

White comb	14@15
Amber	10@12
Extracted W W	7½
Extracted light amber	6½@7
Beeswax, per lb.	25@29

Hay.

Scott, Magner & Miller say:

Receipts of hay on the San Francisco market for the six days ending today have been 3200 tons. This is about the same as we have received for the previous two weeks. The demand in San Francisco has not been equal to these heavy arrivals and the market has plainly felt the effect of these shipments, and is easier, and prices somewhat off. This condition applies to the entire line of the market.

Purchases that are beng made in the interior are only made in a very small way and for immediate shipment only, as these is no confidence felt in the stability of the market on the present range of prices. However, it is thought that after the Fourth of July trade conditions may be expected to improve, and while a better demand may develop, it is not thought that prices can be maintained steadily.

During this week the Government received on contract that was placed in the market some time ago, 1000 tons of old hay for shipment to the Philippine Islands but this has had no effect either one way or the other, on the current market, as this shipment was purchased long ago and re-baled for export. The general export trade has been light, although there are some shipments being made steadily to northern coast ports, which trade has relieved this market considerably.

The trade in alfalfa is not active.

Fancy wheat	13.00@13.50
No. 1 wheat or wh and o.	11.00@12.00
No. 2 wheat or wh and o.	9.00@10.00
Choice tame oat	11.50@12.00
Other tame oat	8.00@10.00
Wild oat	7.50@10.00
Stock hay	5.00@6.00
Alfalfa	6.50@10.00
Straw	40@55

Grain.

Wheat No. 1	1.42½@1.45
Barley, common	98¾@101¼
Barley, fancy	1.02¼
Oats, white	1.45@1.50
Rye, new crop	1.50@1.60
Corn, large yellow	1.55@1.60
Alfalfa seed	16@18
Mustard brown	3¾@4½
Millet	2½@3
Flaxseed	4½@5
Broom corn seed, per ton	23.50

Feed Stuff

Bran, per ton	22.00@24.00
Feed cornmeal, per ton	34.00@35.00
Cracked corn	34.00@35.00
Ground barley, per ton	23.00@24.00
Rolled oats, per ton	28.00@29.00
Middlings	28.00@31.00
Oil cake, per ton	38.50@40.00
Cocoanut cake per ton	25.00
Mixed feed, per ton	24.00@30.00
Shorts	23.50@25.00

Deciduous Market

SACRAMENTO, Cal., July 2, 1910.

The California Fruit Distributors reports: The following gives number of cars of deciduous fruit shipped from all points in California for the week (seven days) ending Friday morning, July 1, 1910.

Cherries.

Six cars. We will probably have no further shipments of this variety to report. Shipments for the season have now reached a total of 249¾ cars which is exactly the quantity reported for last season and has exceeded our estimates by nearly 50 cars.

Apricots.

Fourteen and one-half cars. Apricots may now be said to be done as there will be practically no more of them offered.

Peaches.

Sixty-three and one-half cars. As predicted in our last letter there has been a material falling off in the shipments of this variety. There will be no heavy shipments this week, but ample stock will be available after that time should they be required.

Plums.

Two hundred and eleven and one-half cars. The plum shipment has pased its zenith and supplies will gradually decrease until the close of the season. Tragedy, Simoni, P. Duane, Burbank, Peach, Ogon, and Mystery are now nearly done. Limited quantities will be available for the next few days. Other varieties mentioned in our last letter, such as Diamond, California Red and Sugar, together with Yellow Egg, Bradshaw, Sultan and Satsuma will be in liberal supply during the coming week.

Pears.

Thirty two and one-half cars Bartletts are now going forward from the Sacramento River district and are of fine quality. Straight and mixed cars of this variety are now available for the f.o.b. market.

Grapes.

No change to report in condition of this fruit. The first Fontainbleaus have made their appearance and have gone forward to auction. They will be in fairly liberal supply in one week to ten days.

Weather conditions continue very favorable and with the exception of a very few days has been cool and delightful. The slight burning reported from earlier sections last week, as indicated at that time, has resulted in but little damage.

ALMOND OUTLOOK

Note the following telegrams;—New York, June 20th. Conflicting reports of damage to foreign Almond crop estimate from 25 to 50 per cent of a crop. Price quoted on Princess (Nonpareil) 20 2-3 cents. Tarragonias 14 to 15½ cents, duty paid N, Y, Also—New York, June 22nd. One dried fruit house quoting Tarragonias 14½ cents; Hardshell 9 cents; California Ne Plus Ultra 16 cents; Llewellyns 13½ cents. Also—June 28th. No market yet made on 1910 crop foreign Almonds. Speculative prices are 14¼ cents for Tarragonias and 18 cents for Princess, delivered N, Y (probably the latter subject to duty of 3 cents which would make them 21 cents for Nonpareil). Foreign shippers waiting for California Association to make prices. Trade expects to be advised on established figure about July 1st. Also—Chicago, June 30th;—Nut Brokers and Jobbers all claim absolutely no price made yet on either foreign or California Almonds. Expect California price to be made tomorrow. Reported foreign crop very short. High prices expected.

The above are all significant. Two sealed bids were opened today. One ranging from 13.81 cents down. The other ranging from 13 7-8 down. Also four sealed proposals to sell on commision for us at 6 and 7 %. Other firms appeared by representatives and appealed for the privilege of selling for us on commission. The sealed bids were promptly and unanimously rejected.

Then a contract was made, with H. C. Fisher of San Francisco, for 50 tons of shelled Almonds at figures from 23 to 33 1-3 % higher than last year.

Also a contract made with the Edmond Peycke Co. of Los Angeles who are to sell all except above at terms very favorable to us, we to name the price at which to sell.

While we are practically agreed on what the prices should be we do hot want to make them public just at present. We want a little further investigation at first. Rest assured your interests are being carefully considered. —J. P. Dargitz, Mgr. Cal Almond Growers' Ex.

Citrus Market

LOS ANGELES, July 6, 1910.

With Fourth of July demand over and the greater bulk of Valencias shipped, there is a little less interest manifested in the orange market. However, with Seedlings, Mikes and Sweets out of the way, the 3000 cars of Valencias yet to go will probably be moved at a regular rate now which will insure a reasonable price for every saleable orange. The fruit is holding its quality excellently and with the sweating to color up, it makes an excellent appearance.

Lemons have lost some of their keenness and the demand is not quite so strong as before the Fourth, but at this season of the year all that can possibly be produced will be picked up at a most satisfactory price. The lemon freight rate decision can only have a most satisfactory result on market and on returns to producers.

NEW YORK, July 5.—Twenty-one cars sold. Market very strong and active on all varieties. Clear and hot.

NAVELS—	Avge.
Golden Cross, O K Ex	$5.20
Red X, O K Ex	4.60
Dan Patch, A F Ex	3.60
Pony, A F Ex	3.25
Golden Cross, O K Ex	5.20
Red X, O K Exx	4.40
Upland Quail, O K Ex	4.85
Pet, S A Ex	2.85
Euclid, Or Growers' F Co	4.45
Uplander, Or Gowers' F Co	3.75
Pet, S A Ex	3.55
Grove	3.80
Cactus, Xc, High F G A	2.70
VALENCIAS—	
Blue Banner, Pioneer F Co	4.65
Golden Pheasant, Xc, Ind F Co	2.70
Freedom, Xc, Ind F Co	2.90
Constitution	2.90
Old Mission, Fy, Chapman	3.60
Old Mission, Ch, Chapman	3.70
Golden Eagle, Sd, Chapman	3.20
Red Globe, Riv Ex	3.15
Cal Orange, Riv Ex	1.65
Royal Crest	4.60
SEEDLINGS—	
Titus Ranch, Fy, Sn Marino G P A	3.65
El Toreador, Sd, San Marino G P A	2.35
Titus Ranch, Fy, San Marino G P A	3.75
Constitution, San Marino G P A	3.35
El Toreador, Sd, San Marino G P A	2.95
SWEETS—	
No name	3.20
Cactus, Xc, High F G A	3.50
Mission Bells, Fy, A B Chapman	3.15
Mission Memories, Ch, Chapman	2.55
Constitution	3.35
Stock Label	2.35
Old Mission, Fy, Chapman	4.40
Golden Eagle, Sd, Chapman	3.85
Dan Patch, A F Ex	1.95
Pony, A F Ex	2.40
Blue Globe, Riv Ex	3.95
Red Globe, Riv Ex	3.00
Cal Orange, Riv Ex	1.65

BLOODS—Our Favorite, $2.30. MIKES—E High A, $3.95; Grove, $2.75; Sugarloaf, $2.25; Highgrove, $1.80. JOPPAS—Flamingo, $1.65. GRAPE FRUIT—E High A, $3.20! ½ boxes, $2. NAVELS—½'s G Cross, $2.15@2.10. BLOODS—½'s, Red, X, $1.60. MIKES—½'s, R Globe, 95c. SWEETS—½'s, B Globe, $1.15; Globe, 85c.

BOSTON, Tuesday, July 5.—Thirteen cars sold. Hot. Market unchanged.

VALENCIAS—	Avge.
Nonpareil, Covina Ex	$4.00
Stag, A C G Lateen S	3.10
Hunter, A C G Lateen S	1.80
Tunnel, St Fernando	2.70
Prairie Chicken, A H Pachappa	2.45
Grove	3.20
Blue Banner, Pioneer F Co	3.00
Sunflower, C C U	2.80
Monogram, C C U	1.10
Teal, Covina Ex	2.80
Pointer, A C G Lateen S	2.00
Rey, St Fernando	3.75
Squirrel, A H Pachappa	1.90
Alpha, Xf, Robt. Henderson	3.65
Delta, Sd, R Henderson	3.15
Golden Scepter, Or, Rialto O Co	2.70
Arch, Ch, Hawarden C A	2.30

AUSTRALIAN NAVELS—Rey, $2.90; Tunnel, $2.50. NAVELS—Squirrel, $3.60; Palm Tree, $3.10; Grove, $2.45@3.30; Cactus, $2.80. CRAFTON LATES—Rey, $3.45; Tunnel, $2.20. GRAPEFRUIT—Victoria, $3.25; Golden Flower, $2.90. SEEDLINGS—Our Favorite, $2.15. ST. MICHAEL'S—Golden Fruit, $1.60.

ST. LOUIS, Tuesday, July 5.—Cloudy. Advancing on oranges. Prices low on lemons account quality. One mixed car and one car lemons sold.

NAVELS—Pomona, $3.55. SWEETS—Pomona, $3.00. ST. MICHAEL'S—Pomona, $2.70. HALVES—$1.50. BUDDED—Pomona, $3.05. LEMONS—Blue Jay, $3.85.

CHICAGO, Tuesday, July 5.—Lemons are firm; trade is good and offerings are no more than can be readily sold.

Boxes, California choice, $6.75@7.25; extra choice, $7.25@7.75; fancy, $7.75@8.00. Some common, 50c discount.

Oranges—There is a steady market. Trade continues good and offerings are not large.

Boxes, California Valencias, late, $3.75@4.50; seedlings, $2.75@3.00; common puffy, $2.50.

PHILADELPHIA, July 5.—Lemons, per box, $4.00@6.00.

STAINS.

Coffee and fruit stains are easily removed if as soon as they are made the soiled article is held tightly over a basin of hot water and wet thoroughly and boiling water at the same time is poured through the stain once and again. The blemish will be washed away in less time than it takes to tell how to do it. Neither coffee nor tea stains need be the bugbear housewives make of them. Both disappear in the family wash if this is tolerably well conducted. The ugliest and most obstinate of fruit spots are amenable to the following treatment. Lay them in hot water in which a generous handful of borax has been dissolved. Leave them thus for ten minutes; then rub and wring and lay them damp upon the grass in the hot sun for the rest of the day, wetting them every hour with the borax water. Rinse them in pure water and hang up for the night. Next day cover with lemon juice and salt made into a paste and leave them again in the sun, wetting every hour with lemon juice.

LESSONS IN BEE KEEPING.

(Continued from Page 17.)

The bees from the outside will usually release her in a very few days if they have no queen in the hive already.

Before introducing the new queen it will be necessary to find the old queen and kill her. To find her you will probably have to search over each comb and keep a watch among the bees for some time. She will be long, slender bodied, and nearly twice as heavy as the worker, and much more slender than the drone. The queen should be young and secured from some reputable queen breeder, and her introduction should be three to seven days after the killing of the old queen though we have often succeeded in introducing at once. The new queen will usually go to laying in from one to three days, and 21 days later the young bees will commence to emerge.

A smoker is an essential adjunct in all these operations. Now, if you have been successful you have two hives instead of one, but the chances are that you will fail often in your first attempts on the second plan. In the next paper we will take up comb building and comb honey.

UNIVERSITY WORK IN SOUTHERN CALIFORNIA.

(Continued from Page 5.)

Pomological study of the navel orange with a view to the selection of improved types and the phases of development of the fruit will be continued and similar research extended to other citrus varieties with a view to increased commercial value and suitability.

The investigation of the life histories of the more important insects of citrus trees will be continued to extend knowledge needed to develop the most effective and economical warfare against these pests.

The culture and commercal handling of lemons will be investigated on a broader scale both in field and laboratory. The disease known as anthracnose or "wither tip" will receive particular attention.

Studies and field tests of protective treatments of leading commercial vegetables will be extended through direct investigations and cooperation with growers whose interest has been so far commanded by earlier efforts in this line that they desire to make contribution toward large scale demonstrations.

Crown gall or "root knot" of stone fruits will receive systematic study and curative treatment.

The test of peaches with a view of securing varieties of more regular growth and production under conditions which invite unseasonable activity and dormancy will be continued by means of a collection of peaches now growing upon the grounds of the station, and bybridization for the production especially of suitable varieties will be undertaken.

Propagation and growth tests of various fruit and timber trees and other plants with sewage irrigation, in cooperation with the city of Pasadena upon a farm owned for that purpose by the city, will be continued upon an increased scale to make demonstrations promising great value to all interior municipalities.

Increased equipment of the Plant Disease Laboratory at Whittier and the Citrus Experiment Station at Riverside will be secured through appropriations for that purpose by the California Legislature of 1909. Both interior equipment and out-door improvements significant from the point of view of ornamental and commercial horticulture will be advanced.

Especial work under the legislative appropriation of 1909 for "Investigations on the conditions and problems attending the culture of crops in the Imperial Valley and similar attending sections" will be pursued to the completion of a report for the legislature of 1911. This work is receiving the careful attention of the University experts in soils, animal industry, plant production, etc. , and significant results are anticipated.

The above plan was adopted by the board of regents at its regular June meeting.

DARNING MADE EASY.

The next time you have a hole in a stocking that you dread to tackle, baste a square of net over the hole. Then darn in the usual way. Draw the threads back and forth through the meshes of the net, skipping every other one, so that in darning in the opposite direction there is a mesh to darn through.

Keep on hand for this purpose remnants of black, white and ecru net. They can be put in a small bag, in the darning basket to be in readiness whenever needed. A cotton net with considerable body is the best to use for an underweave. Canvas, unless very soft, is apt to cut the cotton.

For darning sheerer fabrics wash blonde can be basted on the under side of the hole filled in the same way. This method must not be used where the hole is in a prominent place.

NONE OF HIS BUSINES.

One morning a rustic appeared at the window of a postal station, and after peering through the bars inquired:

"Hev yeou got 'bout 50 cents' worth of stamps, mister?"

"Certainly!" returned the clerk. "What denomination, please?"

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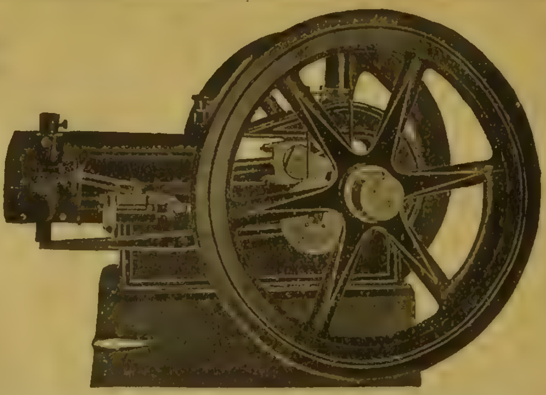

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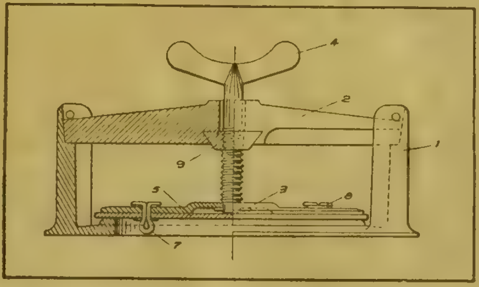

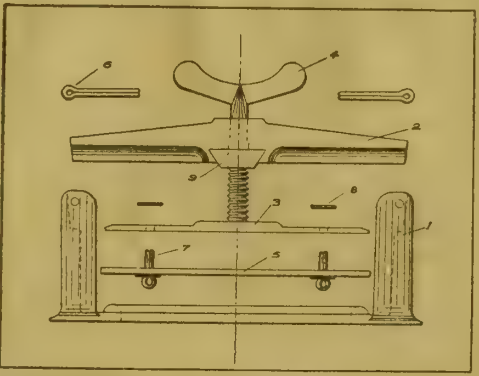

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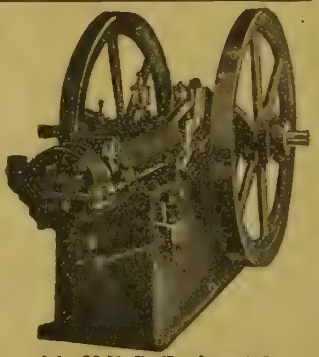

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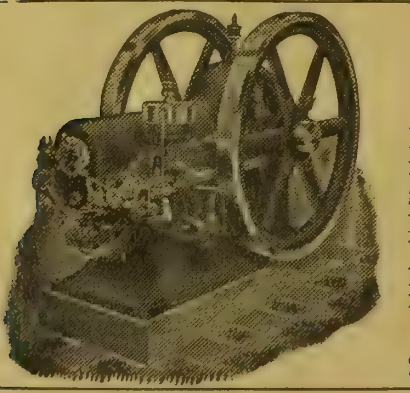

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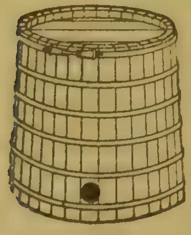

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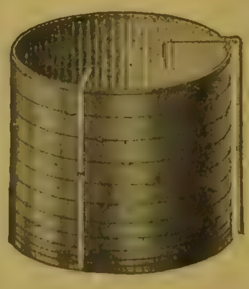

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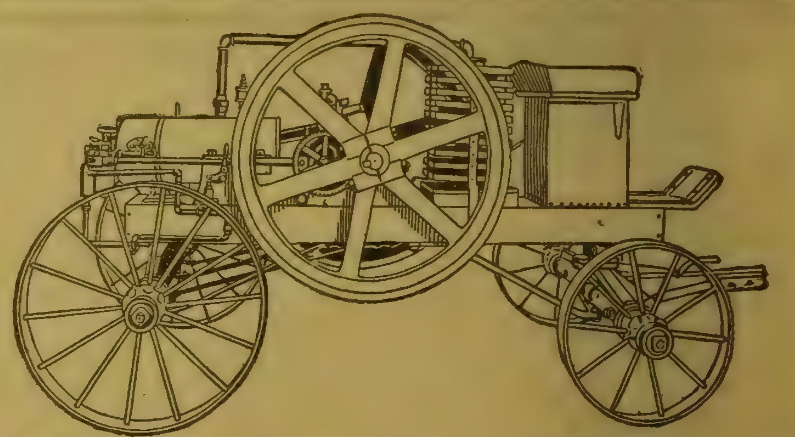

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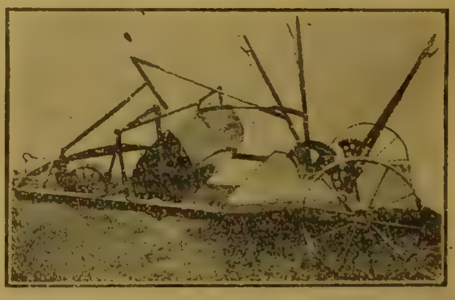

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Los Angeles July 14, 1910 San Francisco

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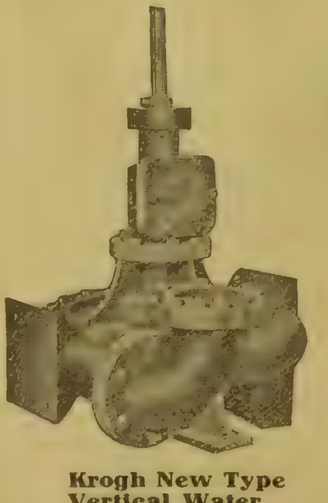

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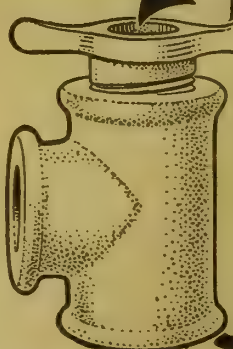

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California Cultivator

Vol. XXXV—No. 2 Los Angeles, California, Thursday, July 14, 1910 Subscription $1 a Year

The Pear Thrips and How It Must Be Controlled

By DUDLEY MOULTON, Deputy Commissioner of Horticulture at San Francisco.

Mr. Moulton Has Observed Closely the Work and Life Habits of the Thrips and His Observations Are of Value.

SEVERAL years ago the matter of controlling the Pear Thrips was considered one of the important problems which confronted the ver of deciduous fruits in California. Today area of orchards which are attacked by this ect has increased many times over and the mulative injury, the continued attack on the e orchards for several years, has brought the ter to a crisis in several localities and esially in the Santa Clara Valley. Many orards are weakened to such an extent that they ill soon be past recovery unless the insect is mediately checked. The financial loss to the r and to the several communities has brought roblem to the very door of the banker, the hant, and other business men and it is of vital portance that they too understand the thrips and how it can best be controlled.

New Remedies.

The many recent theories and discussions of "new remedies" for this insect have brought out much unfair and unfavorable criticism of those who have borne the burden of the investigations and who have tried honestly and with all fairness to give everybody's pet idea a trial, but who at the same time have gone quietly about their work with only the one purpose in view, namely, to get the most reasonable, practicable, cheapest method of treatment for this insidious insect. The newly suggested theories of "soil fumigants" and "lime" sprays are not new at all, but have already been considered, experimented with, and classed out as of little or no importance, these giving way to more effective remedies. These new theories seem more or less reasonable to the lay mind or to the unsophisticated orchardist. They are not only misleading but they cause the grower to distrust the best efforts of those who are really trying to help him.

Injurious insects are normally controlled in one of two ways either by their natural enemies such as internal parasites or predacious feeders, or by artificial means. No parasitic natural control for the thrips has yet been found and therefore if we are to save our orchards we must resort to the best known artificial means. It is the discussion of these methods that is the burden of this article.

Tried Everything.

When the investigation by the Department of Agriculture was first undertaken, the writer with other entomologists at Washington enumerated every possible artificial remedy which seemed at all practicable. These were to be tried separately and combined and were to be worked out in conjunction with the orchardist himself. All experiments were to be based on an exact knowledge of the insect and recommendations for its control were to be based only on the results of such experiments. Never have control methods been advised to follow out some pet theory of the investigator or after only superficial examinations of their experiments. It therefore now seems surprising that any party, be he investigator or practical fruit grower, should try to discourage or discredit the work of those who have been willing to fight the problem through against the greatest odds and the more so now that these efforts are being crowned with success. The proof of this success is the normal crop of clean prunes and pears on the treated orchards. Men who must be indifferent, who will continue to ignore the means of control offered, although they cannot supply an alternative, who are not willing to try to help themselves, will probably continue to have partial or absolute failure of crops. On the other hand men who are willing and eager to learn how to control these thrips, who will follow the recommendations of plowing and spraying, doing this work with care and intelligently can insure themselves of normal crops of fruit. It may not be during the first year, but it will surely come the second year and afterwards.

Life History.

The life-history of the pear thrips has already been much written about, but the following facts are apropos at this time. The mature adult thrips are coming out from the ground during a period of more than a month from about February tenth to March fifteenth. They fly from the ground up onto the trees. These adults feed in the opening buds and blossoms and place their eggs within the tender tissues of the plant. They do not bite off particles of the outer tissues of the plant, hence we cannot kill them by spraying poisons onto the trees. If they are killed by a spray it must be by an external irritant or poison. Normally the adults die immediately after placing their eggs. The young larvae feed as did their parents on the tender plant tissues. They are without wings hence cannot move from tree to tree and when fully grown they must drop to the ground under the tree on which they were born. The larvae may be seen on the trees during the period from March tenth to about April thirtieth. Upon entering the ground they penetrate to a depth of usually between four and nine inches. Each forms a tiny cell and remains within this until the following February. They are passing through the pupal stage during the period from September to December. They emerge as fully developed insects with wings.

Methods.

Experiments in (1) irrigation, (2) fertilization, which included tests of the so-called soil fumigants, Apterite and Vaporite, (3) plowing and (4) spraying, have all been given a fair trial and each can be now given its proper place in the methods for controlling the thrips.

Irrigation.

Irrigation should affect the thrips in one of two ways, first directly by actually killing them when they are submerged and secondly indirectly by placing the soil in such condition that plowing during the fall can be pursued to better advantage. Blocks of soil in which thrips were numerous have been submerged continuously for a period of 72 hours and without killing any of the insects. They are so strongly resistant to water that it is not practicable to submerge them long enough to insure their destruction. Irrigation to actually kill the thrips in the ground is therefore not to be considered. Late summer or fall irrigation, wherever possible, is greatly to be desired if later such lands can be plowed as recommended as the auxillary treatment with spraying.

Fertilizers and Soil Fumigants.

It is a well established fact in the practice of horticulture that fertilizers must be applied to soils where a single crop is harvested from the same area year after year, if the productiveness of the orchard or field is to be continuous. Without doubt many of our orchards need such treatment. The common fertilizers such as potash, phosphoric acid, and nitrogen, in their various forms, are in themselves not insecticides. Even if the whole surface of the ground were to be covered for an inch or more in depth, or if this amount of fertilizer were to be drilled in, it is probable that the insects would not be disturbed. Fertilizers should be applied to strengthen the trees, but it must be stated most emphatically that this treatment will not kill the thrips. Several preparations have been manufactured for the double purpose of fertilizer and soil fumigant. The insecticidal value of these mixtures lies in the strength of the crude carbolic acid or the crude creosote oils which they contain. If such mixtures could be drilled into the ground at the rate of 100 or 200 pounds to the tree they might kill some of the thrips. "Apterite" has been tried at the rate of one pound to the surface square foot or at about 400 or more pounds to the tree. This was drilled into the ground to a depth of about four inches or to a depth immediately above where the thrips were located. The blocks of soil thus treated were confined in galvanized iron cages and at their normal depth in the ground so that the inclosed soil received the full benefit of the fumigant. In one experiment the ground was watered, in the other left dry. The experiments were examined several weeks later, the thrips were all still living. We can assure the advocates of soil fumigants that it will take many tons of their mixtures per acre to kill even only a small per cent of the thrips. This is obviously absurd.

Cultivation.

The benefits of plowing and thorough fall cultivation for thrips are not yet fully appreciated. The thrips are actually in the ground from May first or sooner until about the middle of February of the following year. They are usually between four and nine inches from the surface. This statement is based on the averages of the records of several hundred blocks of soil each of which was examined in layers inch by inch and the thrips actually removed and counted. Some of the insects do not penetrate deeper than an inch or two while others go even lower than nine inches. They continue in the larval condition from the time they enter the ground until the early fall when they gradually change to pupae and then to adults. It is obvious that a large per cent of these thrips can be disturbed by thoroughly plowing and breaking up the soil. Just what per cent can be killed can only be approximated by experiments, and the results of such experiments for the 1909 season can be seen by referring to the bulletin. "The Pear Thrips and Its Control." Here about 70 per cent less thrips actually emerged from cultivated ground than from soil which was not treated. Similar records have been obtained during the present season. About 70 per cent of the thrips were killed by the plowing method. This treatment of the soil does not mean to simply plow at any time when the thrips are in the ground, but rather only during a certain period when they are most susceptible to injury. This period is from about October first to not later than January fifteenth. Plowing should not be continued after the first of February for then it opens up the ground so that the thrips can get out much earlier and the subsequent injury is more noticeable than where no plowing at all has been done. Plowing must be thorough, it must be followed by a harrow to break up the clods. Crossplowing should be resorted to to insure breaking up the soil to a uniform depth

(Continued on Page 31.)

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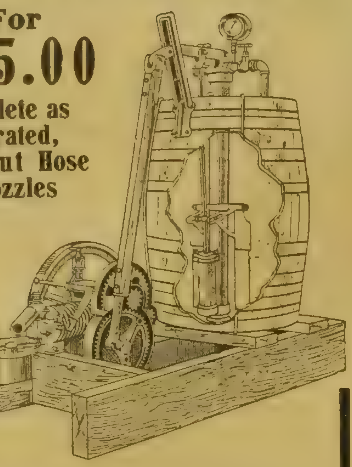

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A LIVE CLUB.

THE Patrons of Husbandry, the Farmers Clubs, the University Institutes, together with the Short Course at the University Farm, are the principal places where the farmer may sharpen his intellect and the better prepare himself for the diverse problems of his calling. Another factor, which has been a large one in extending information over the state, is the demonstration train conducted by the Southern Pacific Railway and the University of California. The organization of the farmers of the northern part of the state has been largely in the Grange, though the Farmers Union has been somewhat of a factor. The Farmers Club has also been encouraged but not to the same extent as in the southern part of the state. The Grange has no representation whatever south of the Tehachapi; the Farmers Union has a number of locals but the Farmers Club still predominates.

One of the strongest of these for years has been that at Claremont, Los Angeles county. While a farmer's club, it has passed under the name of Claremont Pomological Club. This club has monthly meetings during nine months of the year, but during the summer it takes the usual school vacation. The last meeting for the summer held on the last Monday in June, and the first meeting of the next year held on the last Monday in September, have as an especial feature a picnic at Ganesha Park, Pomona. While the membership of the club is not large, these meetings attract attendance from many parts of Southern California, and the programs are arranged to have a wide interest.

The program at the recent last-of-the-year meeting held on the 27th of June, was given over to consideration of two topics; the forenoon to frost protection, the afternoon to fumigation.

The consideration of the subject of frost protection called for discussion of two features, namely, the scientific side and the practical side. The former was in charge of Prof. A. B. Wollaber of the Weather Service, in charge of the Los Angeles station. After an informal discussion of the subject, Mr. Wollaber read a paper on the subject written by Prof. Alex. McAdie of the San Francisco office.

Charles C. Teague of Santa Paula, took up the practical side. Mr. McAdie's paper and quotations from Mr. Teague's discussion will both be given in the Cultivator of a couple of weeks later.

Prof. C. F. Baker, Assistant Entomologist of Pomona College, and Editor of the Journal of Entomology, opened the discussion on fumigation. He supported the view that the practical worker's greatest aid came from the investigations of the trained scientific mind, and that in order to have proper scientific training, the educator should be able to do with his hands as well as reason with his mind. He referred to large organizations of capitalists who are promoting great agricultural interests, especially mentioning the rubber industry in Mexico and the sugar industry in the Hawaiian Islands. These companies, he said, employ scientific men to investigate problems which the state and nation are unable, or, if able, are unwilling, to take up to the extent which their best interests require. Some of the brightest chemists and entomologists and engineers of the country have been employed by these large concerns, and almost invariably with great profit. They have found that the soundest and most practical work is founded upon the scientific. He referred also at some length to the particular work of Pomona College in preparing young men for scientific work in the orchards of California. This has been especially the case along entomological lines.

The practical side of fumigation was treated at length by Mr. Sellars, in charge of fumigation of the great Arlington Heights orchards at Riverside. The fumigation of these orchards requires the expenditure of $35,000 to $40,000 annually, and every effort to make the work effective and economical has been used. Mr. Sellars' paper is too long to insert in this issue but will be liberally quoted from later.

Mr. Fred J. Smith appealed for more of the co-operative spirit in the matter of orchard work. He referred to the fact that while California has the greatest co-operative marketing organization in the world in the California Fruit Growers Exchange, the most of the people have not yet learned the first principles of co-operation. He said that in Denmark ninety per cent of the dairymen are members of co-operative organizations, and these have practically captured the markets of Great Britain. They not only market their products, which bring in over $90,000,000 yearly, but they buy everything needed by their members. That little country has 250 of these co-operative organizations, nor does their work stop with the purely commercial side. Any movement of a political nature which concerns the farmer is taken up, and the members stand almost as a man for measures advantageous to their calling. All kinds of merchandising, banking and other activities are also conducted by these co-operators. California must more fully adopt this co-operative principle. The speaker referred to the fact that many farmers could not overcome their prejudice against paying somebody else to manage their business. They allow their prejudice and egotism to prevent them from joining their neighbors, and the result is contention, or at least lack of unity, which allows one producer to let his products be used to batter down the price of his neighbor's. Mr. Smith made a direct appeal to citrus growers from two miles west of Covina to the eastern boundary of Los Angeles county, to unite in an effort to eradicate or bring under control all orchard pests. Contracting fumigators had agreed to take up the work if growers would get together, and do it for a liberal percentage, but Mr. Smith appealed to growers to employ the most competent man to be secured and so keep the business management entirely within their own hands. The objection was raised that such a man would require a large salary, but the speaker replied that such salary

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would not begin to amount to as much as the percentage demanded by the contractors, and the difference might just as well be kept by the growers.

CO-OPERATION A SUCCESS.

Organization, which is co-operation, has become the rule of modern business. It is the keynote of the success of every industry in these days. Nowhere is it more needed than in the marketing of agricultural and horticultural products. The individual grower standing alone is like one of the sticks in the old story, which were easily broken. United with his fellow growers he is like a component part of the bundle of sticks which the young men could not break at the command of their father.

The individual grower, shipping alone and on no system, first encounters the transportation company—organization. Next he must deal with the commission merchant who acts openly or secretly, in combination with his fellow merchants—organization again. If things do not go to suit him he complains, he seeks concessions, reparation. Too often he finds that he might as well try to stop a locomotive with a straw. He is bitter against the transportation company, but it is not to blame for following those rules or methods which it has found essential to the lucrative conduct of its own business, or most beneficial thereto. He scolds at the commission merchant, but the latter is simply looking out for his own interest and is not bound to consider that of the grower before his own. Each of the hundreds of growers is an individual problem to the transportation company and the consignee of the fruit or vegetables, each with different ideas, different desires, different claims from every other.

Again, it is said that the successful management of every hotel or boarding house lies in the buying, not in the amount received for board. A well organized and managed hotel, or a boarding house with a good manager, can make money with a smaller number of patrons than another hotel or boarding house entertains and feeds and yet fails. Conversely, the profits of agricultural or horticultural enterprise lie mostly in the successful marketing of the products. Successful in that case means systematic and system is possible only with co-operation when it must meet co-operation.

Fruit and vegetable growers in Florida have met with other discouragements in the past than poor crops and they will meet with still more in the future with larger crops of citrus fruits, strawberries, celery, potatoes and other products of the soil and more competitors at home and abroad. If they hang together and aid the organizations now existing or about to be founded they will overcome these obstacles to success. As individual members they will benefit by the mutual understandings between transportation and market men on the one side and the organization they belong to on the other; by the improved methods of putting their product on the market which the Exchange can devise after a minute study of the situation such as is impossible to the individual grower, especially the small grower. The transportation companies will cheerfully make concessions to a united body of the growers which they would find it impossible to make to individuals each pulling a different way, some not exactly certain of what they want.

When every farmer and fruit grower belongs to an organization of his kind and makes up his mind fully and self-convincingly that the majority of that organization knows better what is good for him than he does himself, in cases wherein he is not altogether satisfied with its conduct; when every one resolves to support that organization loyally and at least give it several years' trial before condemning it and the principle of co-operation in selling; then and not until then will fruit raising and trucking in Florida be a solid proposition with an unvarying record of success to each hard-working man engaged in it.

These remarks apply to the Florida Citrus Exchange, the pineapple growers, the celery growers and to each and every organization they and other classes of agriculturists and promologists essay. Growers of citrus fruits should endeavor to attend the annual convention of the Florida Citrus Exchange at the Tampa Bay Casino, Tampa, even if they must make sacrifices to do so, and whether they are members or not. If not members they should haste to become such. The record of the Exchange for its first year is one of remarkable success, when all things are viewed in their proper light.—Jacksonville (Fla.), Times-Union.

WINDMILLS IN THE SEMIARID WEST.

The rainfall in the semiarid West being always light, settlement in that section is to a certain extent hazardous, but the millions of acres now barren, which would prove rich and fertile if irrigated, are now attracting eastern farmers who are prone to risk failure in view of the possibilities in years of favorable precipitation. Some of this land will be reclaimed through irrigation, and the growing of drought-resistant crops and the adoption of improved methods of culture will do much to make the farming of these lands less hazardous. But there have been many deplorable failures which could have been averted, had the settlers fortified themselves agains periods of drought by irrigating small parts of their holdings.

It is with a view of helping such that the feasibility of pumping water for the irrigation of small areas in connection with dry land farming of more extensive areas was investigated by the Irrigation Office of the U. S. Department of Agriculture.

Large wind movement provides a cheap source of power for lifting underground water, and the results of these investigations are embodied in a Farmers' Bulletin (No. 394) entitled "The Use of Windmills in Irrigation in the Semiarid West," just issued by the Department. The possibility of this is set out in a simple comprehensive way, and practical suggestions are made to those who are now using or are contemplating the use of windmills for pumping water for irrigation. The data given for plants on the Great Plains show, however, that the windmill is not a cheap source of power, that to accomplish this result requires capital, and that if the conditions require too great outlay, it precludes the possibility of such a procedure.

The bulletin treats on the sources of water supply, the quantity of water available, well casing, sinking wells, capacity of mills, choice of tower, erection of mills, pumps, reservoirs, maintenance of mills, crops under windmill irrigation, and closes with a description of methods and mills now in use in Kansas, Nebraska, Colorado, and California.

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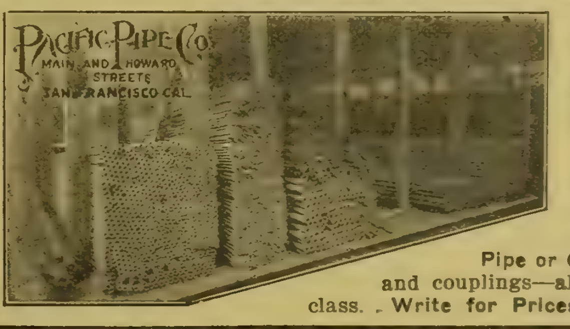

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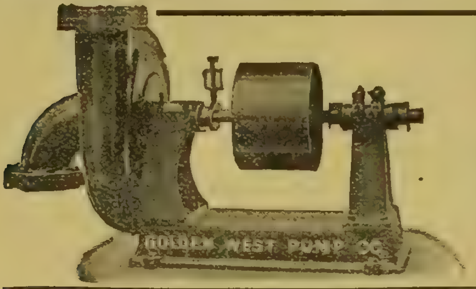

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Deciduous Fruit Culture

CAN THE ORCHARDIST ADD STOCK GROWING WITH PROFIT?

By E. R. Ong, San Jose.

THE high price of live stock and dairy products compared with the price of fruit, in many instances recently, may turn the attention of the orchardists to combining the two. I know by personal experience how little time there is for stock or poultry in our busy fruit seasons, but with hogs nine and ten cents a pound, it certainly would pay to put forth the little extra effort, even in the busy season, that would be required to carry four or five pigs through to fall. Then if thrips, pear blight, or some other evil destroys the bulk of the crop, we will have a little income for the inevitable taxes.

There are many advantages to this plan. In the first place, instead of buying so much commercial fertilizer, we are getting without extra cost an article that in some respects is superior to any chemical or mineral fertilizer and at the same time we are utilizing the by-products and wastes of the farm which otherwise might be a total loss. Our great packing houses claim that their only profit is in utilizing what was formerly wasted. Surely our orchards should be run on the same basis. A good alfalfa pasture, with hog-tight fence, well irrigated and with plenty of fresh water for the stock, will be found a great saving of time and feed. Here the laying hens and growing chicks will have the best green feed possible and now we can keep a cow and revel in peaches and cream, instead of buying milk by the pint and butter at the store, just as if we lived in the heart of the city.

The pigs can roam at will through the spring and early summer with very little care, and be ready for the pears and peaches the cannery rejects. By the time the drying is finished the pigs can be put on full feed and instead of allowing small and inferior fruit to cut down the price on the entire crop, grade it out and feed it to the hogs, finishing them with a little grain and you have an animal that is far superior to one fed in a slaughter pen.

Below are given the feed values of some fresh and dried fruits as given by Professor Jaffa:

FRESH FRUIT 100 Pounds Equivalent.	Wheat Straw	Alfalfa Hay	Corn	Wheat	Wheat Bran	Cocoanut Meal
Apples	34	20	15	16	18	13
Oranges	33	19	14	15	17	12
Pears	40	23	17	19	20	15
Prunes	46	27	20	22	24	18
Apricots	40	23	17	19	20	15
Figs	50	30	23	25	27	20
Grapes	50	30	23	25	27	20
Watermelons	22	13	10	11	12	8
DRIED FRUITS.						
Prunes	175	104	78	84	92	68
Apricots	194	115	86	93	102	76
Figs	186	110	83	89	97	72
Raisins	216	128	97	103	111	84

Besides utilizing the inferior fruit from the ranch some orchardists might find it profitable to buy wastes and low grade fruit from the packing houses.

The pitted prune trade is becoming quite a factor in our markets and the wastes from the pitting will sometimes be found quite valuable. Prunes ranging in size from 90-100s and smaller are a drug on, the market, often held over a long time, accumulating interest and perhaps having to be sent to European markets before being sold and then at a narrow margin, and of course the expense for facing is greater on the small fruit then any other.

There is even greater expense in handling damaged apricots or "slabs," to use the trade term. By this is meant an apricot that has been mashed out of shape in drying, generally an overripe one. These are hand picked to separate them from the good fruit then each piece is run through a hand cutter and trimmed into shape. These trimmings are sold to the distillery at a low price, and after all this expense and waste it is only a low grade fruit.

So, is there any wonder that the packers are so partial to choice fruit even to the point of paying a premium for it.

High priced hogs will dispose of low priced fruit to advantage

ALMOND PRODUCTION AND CONSUMPTION.

The almond production of California for the past 12 years has varied from 450 tons in 1898 to 3270 tons in 1902 while the average has been 1877 tons or one pound for each 23 of the population of the United States.

The importations of almonds for the same time has varied from 2570 tons in 1901 to 8572 tons in 1908.

The available supply of both California and imported almonds for consumption has varied from 3323 tons in 1908 to 11,572 tons in 1908, or an increase of 248% in ten years time. The average per capita consumption of almonds in the United States for the 12 years has been one pound per annum to each six people. We certainly have room for increasing consumption of almonds.

The California crop for 1910 is estimated at 3500 tons and the foreign crop available for importation, at not over 2750 tons, which would make the available supply for the year one pound for each seven people in the United States or 800 tons less than the average for the past 12 years. This of course means higher prices for the almonds this year because one-seventh of the people who ate almonds last year will have to go without this year and they will make the other six-sevenths pay for what are eaten.—California Almond Growers Exchange.

The plan of handling the coming raisin crop proposed by Mr. Clark, under which 54,000 tons of raisins were to be signed up at three cents, has been rejected.

THE PEAR THRIPS.

(Continued from Page 27.)

especially in the rows between the trees. It has been proven that plowing is a help but not an absolute control. It kills a per cent but not all and if prosecuted at the wrong time the orchardist does himself more harm than good. Some soils cannot be plowed during the winter months and we appreciate that some seasons are not favorable to winter plowing. The orchardist however should not lose sight of the fact that every thrips which is destroyed during its period in the ground is one less to kill during the very short time when they are moving up from the ground to the trees and entering the buds.

Spraying.

Spraying is the last and the most important artificial method to be discussed in controlling the thrips. The insect does not take internally parts of the outer tissues of the plants which might be poisoned, hence the poison sprays are not to be considered. That these sprays are not effective has been proven conclusively by numerous experiments. The mixtures then must be some kind of an external irritant or poison such as oil or acid emulsions or tobacco.

Much prominence has recently been given to a lime spray, the theory being that the tiny feet of the thrips are sticky and that this sticky surface would have an unusual attraction for the particles of lime or rather that the lime would draw out the viscid substance in the thrips feet, that the feet would become parched or burned and that this would either kill the thrips or drive them away from such sprayed trees because the means by which they held themselves to the tree was unduly lost. This theory is based on the statement that "Instead of clinging to the plant by means of claws, the foot ends in a small bladder-like structure covered with a sticky substance. This sticky material is produced in sufficient quantity to provide for that which is left wherever the foot of the insect rests, and if it were compelled to walk upon a substance that is more absorptive than the leaf it is quite possible that the supply would be soon exhausted and the insect would not cling to the plant." As a matter of actual fact the thrips foot does end with a claw which must serve it while walking on a leaf or other matter and which probably also serves it when the thrips is working its way out of the ground. The bladder-like structure is also present, but it is not sticky as is stated, nor is there any visid fluid secreted through it. The effectiveness of the lime spray, if indeed there is any benefit, must be attributed to some other cause. The actually dead thrips were never seen in this experiment and it was only supposed that they were either killed or driven away. The observer also states that a few days later "adult thrips were equally numerous on the sprayed as well as the unsprayed trees." It has been noticed that some benefit can be derived by spraying the trees with any kind of a mixture if this material is applied under high pressure and just when the thrips are most numerous on the trees. Many thrips are actually killed or injured or stunned by the force of the spray. The lime spray or any other spray can therefore be of some benefit but the theory upon which this lime spray is supposed to be successful is absolutely without foundation.

In their experiments, those in charge of the Government work have for three years tried out various mixtures with lime such as lime and sulphur, lime and bluestone, lime and arsenate of lead, and these experiments were placed side by side with other sprays of such emulsions as creosote and other various oils and crude carbolic acid and tobacco, and it is only by a careful comparison of these when they are applied under similar conditions that the better sprays can be selected and the others eliminated. A comparison of sprays cannot well be made when they are applied individually in different fields. After careful observations the lime mixtures gradually gave way to the more penetrating oil and tobacco sprays. The various emulsions with oils, carbolic acid or tobacco are all contact irritant sprays and after they are applied the dead thrips can actually be seen.

Whipples Opuntia—"Buckhorn Cactus."

Injures Trees.

The success (judging from the fruit on the trees of this sprayed orchard) of a certain crude carbolic spray in one orchard in the Santa Clara Valley has been talked about as an example of successful spraying. A similar spray to this one, if not the identical spray, was one of the first preparations which was tried out against the thrips. It proved to be most deadly to the thrips, but noticeably injurious to the tree. Other combinations of crude carbolic acid were tried and with similar results. Mr. Stevens appears to have used this spray after it was heavily diluted. He applied it with a high pressure and was probably very careful in the application. Good results must follow such treatment, and it is probable that any of the contact sprays would prove equally successful in the hands of Mr. Stevens. It is probable that the same spray in the hands of another man would have given equally poor results and have been harmful to the trees. The secret of success in controlling thrips lies not so much in the spray itself, if a strong contact insecticide is used, as in the carefulness and thoroughness with which the material is applied.

The Safest.

The oil emulsion sprays as recommended and especially in combination with the tobacco extracts, are probably the most effective and safest thrips contact sprays that we know of. They actually kill the thrips and a man can after about two years practically eliminate the thrips from his orchard. A few others will migrate in but the thrips that are actually in the ground under his trees are the ones which he should be afraid of. If the orchardist does not wish to spray with the formulas which have been found most successful, and at just the proper time, or if he does the work carelessly he should blame no one but himself. It is not the fault of the spray, but the man.

General Instructions.

The recommended methods for controlling the thrips are (1) to thoroughly plow and break up the soil during the period from October first to January fifteenth and not later than this under any condition, and (2) to spray with an oil or tobacco emulsion when the adult thrips and larvae are on the trees. A combination of Bordeaux or lime and sulphur with one of the oil or tobacco sprays will also prove helpful because of their value as fungicides. The first year may require three treatments, two for adults from March 1 to 5 and later again about the middle of March and one application for larvae during about April 5 to 10. One or two applications or perhaps none will be required regularly during subsequent years. It cannot be stated too emphatically that the effect of spraying is accumulative from year to year. This is most aptly demonstrated this year by passing through those orchards which were well sprayed last year. The evidence is a full crop of clean prunes. No more telling proof should be desired. Killing the adults by the first applications protects the trees from the later brood of larvae, and spraying to get all subsequent larvae insures that these insects are not going to drop to the ground and hide under the trees to come out early the following year. By all means kill the thrips before they get into the ground.

Plow and Spray.

There can be no alternative for the grower if the thrips infest his orchard badly. He must either spray or plow and spray, as recommended, or suffer from the thrips as during the several past years. There seems to be a great desire on the part of the grower not to want to plow or to spray even though he can seem to save him self in no other way. The thrips are in the ground now and under his trees. They will come up next February and the prospects are for a larger brood than during the past season. Plowing during the fall and winter, if done as recommended, will kill a per cent of them. Spraying for adults just as the buds open will kill many more and may insure a crop. Spraying for the larvae will kill the new brood before they get into the ground, and will insure protection for the following year. No natural enemies which are effective to control this insect are known. It now becomes the grower. the sceptical theorist, the business man, and above all the near-sighted, doubting entomologist, all alike to stop knocking and to approve of what have been determined the most effective remedies and to unite to overcome this insidious insect. Naturally it will take several years for many to appreciate what great odds the several experimenters have had to pass through to establish reasonable methods for controlling the thrips and the greatest discouragements of all have come from the lack of appreciation by the orchardist himself. Neither those in charge of the Government Station, the State Entomologists nor the local County Commissioners can do this work for the grower, he must do it himself and the matter is now up to him.

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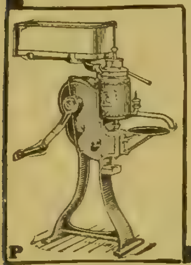

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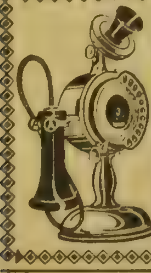

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FEEDING COTTONSEED MEAL.

(Concluded from last Week.)

It is interesting to note that as far back as 1892, Prof. M. B. Hardin, of the South Carolina Experiment Station, reported the finding of both meta and pyrophosphoric acid in all of a series of samples of cotton-seed meal which were examined in his laboratory. He says of their presence: "The salts of the last two acids are said to be more or less poisonous, and though their precise physiological action has not I believe been determined, it is quite possible that some of the peculiar and in certain cases injurious and even fatal effects produced by the use of cotton seed and cotton-seed meal as feeding stuffs may be due, in a measure at least, to the presence of these meta and pyro compounds." In a paper before the Association of Official Agricultural Chemists in that year he mentions the finding of these two forms of phosphoric acid in aqueous solutions of cotton-seed meal, and raises the question whether they exist in the original cotton seed or are formed as a result of the process of the preparation of the meal.

Dr. Crawford refers to Professor Hardin's work, and notes the absence of any pharmacological tests to bear out the suggestion made in regard to the relation of these bodies to cotton-seed poisoning. The matter appears not to have been followed up by that station until last June, when a project was entered upon with that work and hypothesis as its starting point.

A variety of confirmatory experiments were conducted by Dr. Crawford, together with studies on the nature of the compound, and pharmacological tests with sodium salts of the three forms of phosphoric acid. His final conclusion is that "the chief poisonous principle in certain cotton-seed meals is a salt of pyrophosphoric acid. In some this salt seems to be a simple one, presumably inorganic, while in others it is more complex, perhaps an organic one. Probably this difference in the combinations of pyrophosphoric acid may aid in explaining the variation in toxicity of different meals. In certain cotton-seed meals one would expect to find salts of metaphosphoric acid entering into this action. To be harmful the pyrophosphates must be in such a form that they can be absorbed, or the phosphoric acid ionized in the gastro-intestinal tract. The harmlessness of certain cotton seeds and meal is mainly due to the fact that in them the phosphoric acid exists largely, if not entirely, as a compound of ortho, and not as one of the other phosphoric acids. Small amounts of pyrophosphates can apparently be borne without injury. The amount of the salt which may be permitted in cotton-seed meal should be determined."

Aside from the avoidance of too high heating in manufacture, the author does not suggest a remedy for this difficulty in feeding cotton-seed meal. He points out that "at present it would seem to be the wisest course to test each lot of meal by a combined biological and chemical method, and if any excess of poisonous properties is present, to utilize such meal for fertilizing purposes or use for feed with the greatest caution, and reserve for more indiscriminate feeding those which prove harmless to experimental animals."

This work suggests a line of study upon the relation of the character of the soil, etc., to the production of the poisonous body in cotton seed, the part which fertilizers may play, the influence of micro-organisms, and an inquiry as to whether the pyrophosphoric acid is derived from the soil or is due to a physiological process in the seeds. The possible relation of cholin or similar bodies as contributory causes would also seem to be in order. Furthermore, "the question as to whether pyrophosphates will induce a hypersensibility and thus increase the activity of pathogenic organisms should be investigated."

The importance of this discovery as a contribution to our knowledge regarding cotton-seed meal as a feeding stuff will be generally recognized. But beyond this the study will make possible and suggest a whole train of studies upon various ingredients of feeding stuffs in their relation to the animal organism. The desirability of investigations starting out from this point of view has been previously referred to, and is illustrated by several studies now in progress.

Cream Separators, all sizes and prices. O. J. Weber Co., 225-227-229-231 East Sixth street, Los Angeles.

WHO PAYS THE $25.00 TARIFF PER HOG?

A subscriber at Eureka, Mr. W. E. Dickinson, writes regarding his experience in disposing of porkers as follows:

"I had two hogs weighing 650 pounds live, to sell, and investigating found butchers were paying 7½ cents and retailing the meat at 20 cents and lard 25 cents.

"Thought of dressing them myself but found city ordinance prohibiting sale of same unless slaughtered at licensed slaughter house. The price paid for slaughtering, etc., makes this no inducement.

"Now I am unable to convince my wife who paid that $25.00 difference each hog gained in price after it left me, and before the 'ultimate consumer' received it."

In a letter he adds: "I do not know that this is an unusual experience. Perhaps other ranchers have the same thing to contend with, but I would like to hear from others in other parts of the state. It is possible such conditions might be corrected by proper publicity." Mr. Dickinson further adds that many other farm products are in same condition, that while the farmer is enabled to deal with consumer, there is fully 100 per cent added to producer's price before consumer can secure food products.

A sheep grower who has pastured the hills of Lassen county for the past 38 years says this is the dryest season in the thirty-eight.

Anthrax Cure, Milk Fever Outfits See O. J. Weber Co., 225-227-229-231 East Sixth street, Los Angeles.

JUST HORSES AND MULES.

A mule should never be kept in a stall, but in a large, roomy pen. An open lot with a shed for shelter, is even better.

The expense of caring for a mule is less than for a horse. The mule eats less, requires no blanketing, no stall and is more easily kept clean.

A stallion shut up in a dark stall without the companionship of other horses often becomes moody and savage.

Some English stallioners ride a pony while leading their horses for exercise, and the horses become so attached to the ponies that they become fretful and uneasy when they are not near. At night the ponies are given a stall next to the horses.

Pure-bred draft-horses are always in big demand at good prices. Many pure-bred stallion colts are sold at $1,000 as three-year-olds, while pure-bred mares bring from $300 to $500.

A really good horse is never of a bad color but some colors, such as perfectly dappled grays, pure blacks, and blue roans command better prices than others.

If English farmers can afford to use pure-bred draft-mares that are worth $500 for ordinary farming operations, why cannot our farmers afford them as well?

Investigations and experiments show that it does not make much difference whether a horse is watered before or after feeding, provided he is not allowed to drink his fill on an empty stomach while warm.

It is a slow process grading up horses, and the best way is to buy a pure-bred mare and breed to a pure-bred stallion.

The average farmer will do well to let the fancy saddlers alone, as it requires at least a year of regular training to train a first-class saddler to all the gaits, and this takes time and money.

Any man who will strike a horse in the head should never be allowed to drive one again.

When the plow-horses are brought in at noon the harness should be removed and the shoulders washed and rubbed dry while they are feeding.

It is just as necessary to fit a collar to a horse as it is to fit a shoe to the foot.

It is bad practice to allow horses to eat hay from an overhead rack as dirt is likely to fall into their eyes and cause distress and sometimes permanent injury.

If you observe closely you will notice that a young colt, when in the pasture with its dam, spends much of its time stretched out on the ground. Like a baby it requires a great deal of sleep.

Horses that are used exclusively on the farm and do no road work should go unshod.

A lazy groom will never fit a horse for the show ring. It takes active muscle to do that.

A bit of linseed-oil-cake once or twice a week will help to improve the coat.

Do not be in too much of a hurry to force a horse's coat to shed in the spring.

Forced shedding exposes the new hair before it is ready to come to the surface and it quickly becomes dry and harsh.

George Washington was the first breeder of high-priced mules in this country.

A mule seldom gets sick more than once and he generally dies then.

A horse that brings $300 at three years of age, pays as well or better than any other animal on the farm.

Better no colt than one from a three-dollar sire.

Pure-bred draft-horses are coming slowly in this country, but they are surely coming.—Farm World.

AMERICANS EATING GOATFLESH.

"Goatflesh will be known as the poor man's meat in America," said a Kansas City trader, who handles it extensively. "When that time comes it will not be vended by unscrupulous butchers in the guise of mutton, but for what it really is, and a healthier and more palatable meat never had a place in culinary operations."

Goats by the hundred-thousand are slaughtered in the United States annually, and the product sent into the food supply. How much of it reaches the consumer as goatflesh can only be conjectured. Among immigrants from southern Europe the meat, especially that of kids, is highly esteemed. It has a venison-like flavor that wins favor promptly and the taste for it has not to be acquired. Naturally a prejudice exists in the popular mind for the reason that the American people have not been accustomed to it, but tons of goat meat are sold every year as mutton. On account of misrepresentation by retailers, one of the principal slaughtering concerns recently decided to kill no more goats.

Kansas City is the world's greatest goat market, killing over 100,000 annually. About 50,000 reach Chicago. Some are marketed after doing a good job as brush cleaners, others have been in feedlots, but the bulk comes direct from the arid ranges of the Southwest, the natural home of the goat.

Missouri has fed goats numerously during the past year and those who handled them made money. They do not put on the same gains that are possible with sheep or lambs, but their cost as stockers is less, mortality is practically nothing and they will convert feed into marketable shape that neither sheep nor lambs would look at. They are gross feeders however. One Missouri man who fed over 1,000 head during the winter voices the objection that they "rear around too much" and their natural habit of restlessness undoubtedly impairs their gain-making capacity.

New Mexico and Texas are the principal goat-breeding grounds of the United States. Possibilities of production all over the Southwest are unlimited. For a year past the Kansas City goat market has been on a 4@6-cent basis and if these prices continue, breeding will receive a decided impetus, as there are millions of acres of land now producing little or nothing that is available for the purpose. Goat raisers have been put into circumstances of comparative affluence by current scarcity of sheep and lambs, which has created a demand for their output at very remunerative prices. In justice to the goatman his product ought to have a place in the market and until it is sold on its merits he will not get his dues.—Breeders' Gazette.

Do your cows milk hard? Send 50 cents for teat expander. O. J. Weber Co., 225-227-229-231 East Sixth St., Los Angeles.

SOUNDNESS IN HORSES.

A serviceably sound horse is one that for all practical purposes is as good in every way as a sound horse, so far as actual service is concerned. He may have blemishes, in the form of wire cuts or something of that sort, but not of a character to interfere in the least with his usefulness or to cause lameness or soreness. He must have good eyes, good wind, and be free from side bones, bad hocks, spavins, thoroughpins, large splints, buck knees, etc. He may have a small splint or two, if located away from the joints, and slight puffs.

We quote below the principal rules which govern the sale of horses in the auction ring:

Sound—Perfectly sound in every way.

Serviceably Sound—Virtually a sound animal, barring slight blemishes which do not interfere with his usefulness in any way. His wind and eyes must be good, but a spot or streak in the eye which does not affect the sight will be considered serviceably sound, as long as the pupil of the eye is good. He must not be lame or sore in any way.

Wind and Work—The only guarantee this carries with it is that the animal has good wind and is a good worker.

Work Only—He must be a good worker, and everything else goes with him. No other guarantee than work.

Legs Go—Everything that is on the animal's legs goes with him; nothing is guaranteed, except that he must not be lame or crampy. He must, however be serviceably sound in every other respect.

At the Halter—Sold just as he stands, without any recommendations. He may be lame, vicious, balky, kicker or anything else. The purchaser takes all the risk. The title only is guaranteed.—Wallace's Farmer.

Little pigs may be kept from danger of crushing by the mother by having a fender made of a scantling, rail or pole securely fastened, say eight inches from the wall, and the same distance from the floor. The pigs will quickly learn the protection afforded by this device when the sow lies down. Some breeders advocate a farrowing pen not large enough for the sow to turn around in, and with walls open eight inches from the floor so the pigs may run in and out. A pen of this sort may be made by confining the sow at one end of her regular pen with boards so nailed that she will be unable to turn around.—From Coburn's Swine in America.

Shearing sheep too closely, even when the weather is warm, is bad practice, as either a chill or a sunscald is liable to result.

Mature sows can raise two litters of pigs a year, but the pigs should not be allowed to suckle for more than eight or ten weeks.

Correct Grinding

of corn on cob is easily accomplished with the

Fairbanks-Morse Steel Feed Mill

The high price of feed makes it important that you do your feeding on a scientific basis. FAIRBANKS-MORSE FEED MILLS are best on account of their light draft, large capacity, strength and long life. They are designed for slow speed, which reduces friction and wear. A 2 H.-P. Jack-of-all-Trades Engine will run one of these mills, crushing ear corn and grinding it fine in one operation. Shelled corn or other small grains, separate or mixed, can be ground fine in one operation. Made in two sizes: Sacking Elevator can be used with either size. *Moderate price; greatest value ever offered.* Send for Fairbanks-Morse Feed Mill Catalog, No. LD 1034 which also shows corn shellers and Fodder cutter.

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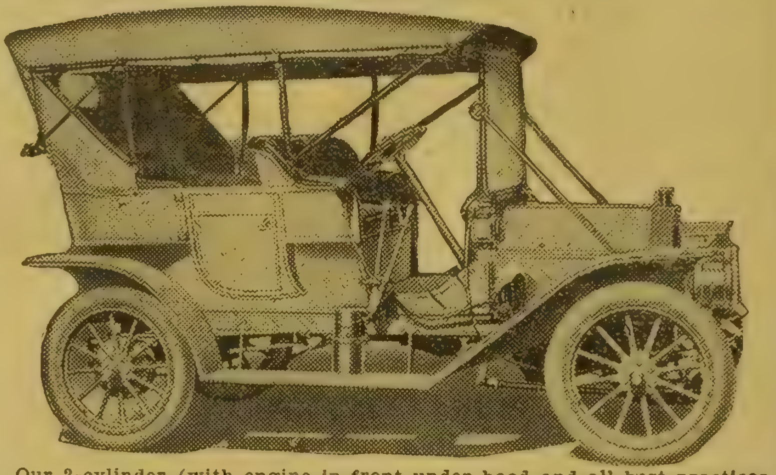

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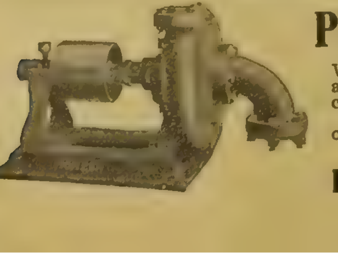

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Small Fruits and Vegetables

BEAN ANTHRACNOSE OR POD SPOT.

NEARLY everyone is familiar with the spotted appearance of snap beans, especially of the wax-podded varieties. This all too common disease has been known for many years and a good description has been given of it by Beach and Halsted.

The disease, which is of fungus origin, goes under a number of names, as rust, wilt, pod spot, etc. As there is a true rust and a wilt, caused by bacteria, the name pod spot or anthracnose is preferred for it.

Practically all parts of the bean plant except the roots are subject to attack of the fungus. The most common indication of the presence of the disease is the occurrence of brown or black sunken areas on the stems, leaves, and pods. They may also appear on the seed leaves (cotyledons) and stems of the plant soon after it appears above ground and cause considerable losses through a reduction in the stand. On the older plants the attack is most serious on the larger veins of the leaves, and the leaf may be wholly destroyed or its efficiency greatly reduced. From the stems and leaves the fungus spreads to the pods, and as many are rendered unsightly considerable direct loss is occasioned.

The presence of the fungus is often unnoticed until it appears upon the young pods. On these it produces small brown or rusty spots, which enlarge and darken until they become nearly black. The affected tissues of the pod dry, leaving sunken areas, in the centers of which may be seen small pink spots, masses of spores which rapidly spread the disease from plant to plant. The fungus grows by sending fine thread-like filaments into the cells of the bean plant. When on the pods, these filaments often reach the beans within the pod, and unless they are entirely destroyed the dried beans become a means whereby the disease is carried from crop to crop. This is now believed to be the principal means by which the fungus passes the winter, and this offers an important clew as to means for preventing the disease.

Diseased beans may be recognized by the brownish or yellowish discoloration of the seed coats, and when badly affected the seeds will be more or less shriveled in addition to being discolored. When such seed are planted the dormant fungus resumes its growth with that of the plant and the seedlings are soon affected. Some efficient method of seed treatment should reduce the amount of disease, but none is known as yet. Careful hand selection, in which all discolored, shriveled seed are rejected, will reduce the amount of the disease somewhat, but it has not proved a wholly satisfactory method. A better method is selection of seed while still in the pods.

If no spots are to be seen on the pods, the seed will be reasonably free from the fungus and sound seed when planted will give a clean crop. On this account, extra efforts should be made to secure good seed. It has been suggested that seed be grown in uninfested regions, but dealers can not always be sure of the absence of the fungus from any particular region, the disease having spread to most of the important bean-growing regions.

For the average gardener selection of seed from the growing crop, all spotted pods to be rejected, and care in planting, so as to be away from other areas of beans, will give a clean crop, if a few ordinary precautions are observed. The spores by which the fungus is spread from plant to plant are very sticky when wet and are readily transferred on the hands, clothing, or implements. On this account beans should never be cultivated or gathered while wet with dew or rain. If it is too much trouble to observe these precautions for the whole crop, it could be done with little extra effort for a small plat on which to grow seed for future planting. There is some prejudice in certain quarters against the raising of seed at home, but experiments at the Louisiana Station gave as good results with home-grown bean seed as with that introduced from a distance.

Formerly spraying with Bordeaux mixture or other fungicides was recommended for the control of the pod spot, and if very thoroughly done at frequent intervals it may prove efficient, but in the light of present experience, if the following recommendations are observed, but little loss will result from anthracnose or pod spot:

(1) Plant seed free from disease.

(2) Keep away from the plants while they are wet.

(3) Remove and burn diseased plants as soon as they are observed.
—Farmers Bulletin 388.

FUNGUS ON BERRIES.

Trouble in the gardens of berry growers of Sonoma county has brought out the following correspondence in the Santa Rosa Republican:

A few weeks ago the writer noticed a very unhealthy state of berry vines and bushes of the genus rubus about this part of Sonoma county, near Fulton and Meacham's Station.

The Logan and Mammoth blackberries in particular suffer greatly. The foliage of the bearing shoots is spotted and apparently the red spots drop out, as does the shot hole fungus on the peach and some other trees, so that the leaves are full of perforations, and finally the edges of the leaves turn brown and shrivel.

The bark of the shoots is affected in the same way. The greater part of the fruit fails to fill out properly and is small, sour and of poor flavor, as though the fungus had attacked them also.

The general result is a great falling off in quantity and quality of the crops and a serious disappointment to the berry grower.

A few big bush blackberry plants seemed to be also affected, but the writer has had no opportunity to examine any large planting of that type. The Himalaya blackberry seems very slightly affected so far.

I can't say how far this fungus has spread, but some Phenomenal berries, bought in Santa Rosa, showed some specimens with the white spots on one side, as noted above.

Wishing to get all the light possible

(Continued on Page 47.)

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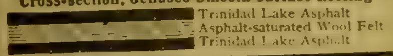

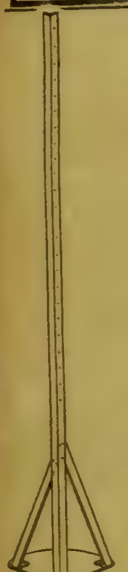
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The Ornamental Garden

THE ROSE UNDER GLASS AND IN THE OPEN.

THE statement is frequently made by magazine writers, and readily accepted as the truth by that part of the public unacquainted with the facts that roses may be gathered from the bush growing in the open every day of the year in this wonderful Southland. This is true only in a limited sense of the statement, yet it is made to appear, by this class of writers, that all that is necessary to have a bountiful supply of cut flowers of this, the Queen of flowers throughout the year, is to own a plot of ground in extent according to the purchasing ability of the grower, planted with the various types and varieties offered by nurserymen.

The idea is erroneous, the statement misleading, and the result sure to be disappointing to the novice who undertakes to grow roses by this method, even in this, the most delightful climate of the United States of America.

Pure blooded Tea roses, and there are but a few varieties of that class in cultivation at present, will if given care and left undisturbed in their growth by the gardener and his shears, keep the statement within the bounds of truth, by producing at all times a few blooms; enough at least to show their character, as to color, form, and fragrance. As a matter of fact, here as elsewhere, the season of roses in superabundance, is the first half of the year. Then it is that the two Banksias, white and yellow, hide themselves beneath a mantle of double flowers.

Then it is that the white Cherorkee appears in all its glory. The single type, with its satiny petals, forms chalices of ivory whiteness, filled with a filagree of golden stamens and anthers. The double variety of this species is very much like the "Snowball" of the Eastern states in appearance, except that it is miniature in size, in comparison with the Snowball. Beauty of Glazenwood with its multi-colored single flowers with colors of copper, of gold and of orange, makes a display of gorgeous beauty, which, when once seen is never forgotten, and be it remembered that if given an opportunity these three varieties, will cover trees or buildings to a height of fifty or sixty feet, yet in two short months is their glory departed, and they are not seen again, except in foliage until the return of spring, the season of roses.

Teas, their mutants and their hybrids, also make a greater display at this season than that of any other time of the year. A greater or less quantity will be produced by this class, during the autumn, if given proper attention during the summer months, and the temperature of the atmosphere does not fall below forty degrees Fahrenheit at night.

One of the essentials to this highly desirable end, an abundant crop of fine flowers during the autumn and early winter months, is to rest the bushes during July and August. Even then the quantity and quality will be affected by favorable or unfavorable climatic conditions.

There is another factor, other than that of climate, which governs the productivity of a rose bush grown in the open, namely, the manner in which the flowers are cut, with or without long stems. The leaves of a plant bear the same relation to it, that the lungs of an animal bear to it—indeed it is no exaggeration to say, stomach too—since it is by them that the food, which is brought to their surface in the sap, is digested and made ready for assimilation by the plant. To cut a flower with a long stem, the foliage will go with it, and in proportion to the amount of foliage removed, will the plant be debilitated. Moreover the low relative humidity of our climate is not favorable to rapid recuperation of the enfeebled subect, and in its weakened physical condition the plant is unable to use the elements of plant food, be it ever so liberally provided by the enthusiastic and industrious rosarian.

The question will naturally arise in the mind of the gardener—Wherein is the difference in conditions between growing roses under glass and in the open, in this land of practically perpetual summer? The soil, the water, the fertilizer, the skill and care on the part of the gardener, being the same in both cases, why should there be any difference in results? The answer is, the difference in climatic conditions. As previously stated, a plant is weakened and debilitated in proportion to the amount of foliage taken from it. A climate of low relative humidity is not conducive to luxuriant growth of vegetation and the rapid recovery of mutilated plants. The climate of Southern California is of that class and character. The remarkable record of six per cent for one hour last year, and from ten to forty per cent relative humidity was of frequent occurrence as recorded by the instruments at our weather bureau; yet there are intelligent, industrious commercial growers of cut-flowers in this southland, who spare neither labor nor expense to secure good crops, and wonder why their bushes, after a year or two, cease to be profitable, or die outright. To the question that arises in their minds, and frequently is put to their fellows in the craft—Why this failure?—Why don't we succeed as do the growers who have their plants under glass?—the answer is, the lack of moisture in the air. No matter how much moisture may be in the soil, if the atmosphere be dry, it does not meet the requirements of the plant. The skillful rosarian with his plants in a glass house is able to control climatic conditions which surround him. By the liberal use of water in the walks, the syringe or spray from the nozzle on the hose, a humidity of eighty-five to ninety-five per cent is maintained the year around.

Visitors to rose growing establishments in California will observe that the doors are never left open—no matter what the temperature may be on the outside. To do so would admit the dry atmosphere, lower the humidity within, and thus defeat the purpose for which the houses were built; the maintenance of a high humidity, also an even temperature throughout the day, and that too every day of the year, which is an essential to successful rose growing. The careful observer will note, too, that a range of temperature between midday and midnight in this section of the state is usually about twenty degrees. Thirty degrees is frequently the record. During bright days the thermometer may show eighty-five degrees at noon, and between midnight and five A. M., a temperature of fifty or fifty-five degrees. Because of such conditions a glass house must be equipped with heating apparatus, here as in the Atlantic States, that a temperature of sixty-five may be maintained at night, to produce cut flowers successfully, and at a profit.
—Pacific Garden.

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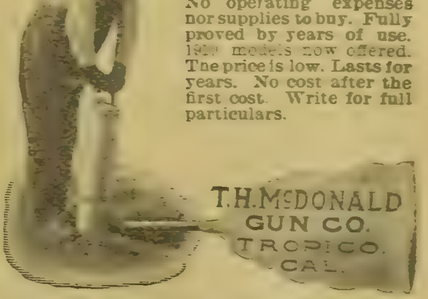

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Appointment of Horticultural Commissioners.

Along the line of an editorial in a recent Cultivator, we wished further information as to conditions, so wrote State Commissioner Jeffrey and he explains the situation so well that we give it in full:

You ask for my opinion upon the status and the utility of the new law governing the appointment of county horticultural commissioners. In the main it is a great improvement over the old law, and in several counties it has vastly changed the character of the service and revolutionized the methods of orchard protection; in others the Supervisors have neglected or refused to appoint under the new act preferring to let the old boards drift along in the old channels and temporarily nullifying the provisions of the amended law. Twenty-seven counties have appointed each a commissioner in accordance with the act of the last legislature, the Supervisors of three counties have refused to make appointments and in several other counties the examinations have been held so recently that the Supervisors have not had time to act.

In Imperial county the Supervisors have been advised by their District Attorney that the Board of Horticultural Examiners should have added three names by selection to the list of eligibles, inasmuch as only two qualified at the examination, the District Attorney holding that the new law requires five eligibles to be submitted before the Supervisors can act. This advice is contrary to that of the Attorney General of the State, whose opinion states that the Board of Examiners can only certify to names by selection where no one qualified at the official examination. The Attorney General's decision has just been upheld in Fresno county, where only one man qualified by examination. The Supervisors refused to appoint. Upon presentation of the case the Superior Court issued a writ of mandate ordering the Supervisors to appoint the eligible who had passed the examination. They made the appointment at once.

Another case of delinquency is in Santa Cruz county, in which the Supervisors made the appointment according to the new law, except that they required the appointee to sign an agreement to accept only such compensation as they might allow and bind himself to vacate the office at any time the Supervisors should demand it. Both these and all similar requirements are contrary to the plain reading of the new law and it is stated that the Supervisors will recede from these conditions. In San Benito county the officials have refused to appoint, upon what grounds I do not know.

The law should stand as it is until amended by the fruit growers of the state. If the officials charged with the selection of horticultural commissioners are imbued with the desire to promote our greatest soil industry the law is ample, authoritative and established by a universal line of favorable court decisions. Its one great defect lies in the fact that it does not in so many words provide a revenue for the maintenance of the horticultural commission. An attempt was made to reach this defect through a county government act by classifying each county and fixing the salary and providing a revenue as is done in other county offices. The last legislature did not undertake a county government act, so the old law was amended as we now have it. In every county where the growers are alert and insistent upon protection of their interests the new law is most satisfactory and it will not be changed till a more effective enactment is offered by the farmers and fruit growers of the State.—J. W. Jeffrey, State Com'r Horticulture.

Frost Protection.

The Cultivator has in hand material for an excellent special issue on protection of our crops from frost. Perhaps weather conditions at this moment are not such as to remind the fruit growers that California ever is visited by Jack Frost, but a few growers' memories may be long enough to recall December and January last. We trust they are also long enough to recall that in some sections some fruit growers have secured immunity from injury and have saved thousands of dollars by a little forethought and preparation for the coming of this unwelcome visitor. California has some "frostless" sections, but they are usually made so by the effort of the growers. The finest fruit in the world is grown in sections where frost may occur and the grower who will not prepare to protect himself deserves the punishment which is sure to come. This is the time of year to look ahead to the colder months and to begin preparation for them. A few hundreds of dollars spent wisely may save thousands.

The issue will appear next week.

Who Gets the Difference?

It has been stated that the retail price of lemons in the stores over the East varies but little with the seasons. A few years ago when lemon growers were receiving anywhere from red ink to a dollar a box, the consumers were paying practically the same per dozen for lemons that they do today, yet there is an effort to lay the increased cost of living at the door of the farmer. If the question were asked as to why this is so, that today the lemon grower is securing good returns, in some cases exceptional returns, we believe it could be answered by the one word, co-operation. Formerly lemons were the legitimate prey of packers and shippers, used as they saw fit to make immense wealth. Today the lemon grower is using shrewd business methods in the marketing of his fruit, employing his own business men to put the fruit into the market so as to secure best advantage. When lemons were selling in the East for $2.00 or $3.00 per box, the buyer paid from 25 cents to 40 cents per dozen for exceptionally nice fruit. Today with some sales as high as $9.00 per box, they are still buying at 40 cents, with lower grades cheaper. With 30 dozen to the box, it can be readily seen that there is still good profit for the retail dealer.

We recently purchased some good bulk raisins at retail for fifteen cents a pound. The raisin producer in the San Joaquin Valley is feeding his raisins to the hogs or selling for two and three cents. The difference is too great. The lemon grower is organized and co-operates; the raisin grower is disorganized and unable to stand with his neighbor.

Moral—but a moral is not in good form, and it is too obvious to refer to in this case.

Power Sites Withdrawn.

President Taft has recently withdrawn from entry nearly eight and a half millions acres of lands on which there are possible power sites and phosphate or petroleum deposits. The President has also appointed engineers of the army who will constitute a board to pass on the reclamation and care of these lands. This is provided for in the appropriation of twenty millions already made. These are the first withdrawals under the new law. President Roosevelt's action along this line was not under the law, but on the theory of the right of the executive to do anything in the interest of the public domain which is not prohibited by law. The water power sites alone cover a total of 1,415,490 acres. Of this, 647,000 acres are in California, 107,000 acres in Arizona, 176,000 acres in Oregon, and 55,000 in Washington.

Consulting Engineer.

Secretary Ballinger has appointed Wm. L. Marshall, recently chief of engineers of the army, as consulting engineer in the reclamation service. It has been persistently rumored that this would mean the ultimate retirement of Director Newell and equally as emphatically denied that such action was contemplated. Should Director Newell be retired, it would cause great disappointment over the West. It is understood that this appointment of Mr. Marshall is entirely acceptable to President Taft.

Farmers Institutes.

J. B. Neff, conductor of Farmers Institutes of Southern California, announces the first fall institutes as follows: Los Alamos, Santa Barbara county, Aug. 7, Los Olivos, Aug. 2; Santa Maria, Aug. 3; Nipomo, San Luis Obispo county, Aug. 4.

With walnuts growing satisfactorily and with trees more heavily loaded than for some years and good prices promised, together with a strong co-operative marketing organization, walnut growers are feeling pretty good this year.

Isolation, hard work and small compensation is too often the lot of the farmers' wives. These are burdens that need lifting.

The greater the number of prosperous farmers, the greater will be the prosperity of every business man.

Agricultural News Notes of the Pacific Coast

Northern California

Cloverdale wool growers have sold much wool at 18 cents.

A new fruit shipping house is being established at Placerville.

Almond Growers Exchange has rejected bids for its coming output.

Deer are more plentiful in the mountains of Shasta county than ever.

Tomatoes from Lincoln, Placer county, commanded two dollars a box in Portland.

The cannery at Haywards, Alameda county, has opened with many improved appliances.

Contra Costa county will vote upon the question of a million and a half of bonds for good roads.

A big tract of land has been subdivided and will be sold in ten-acre tracts at Arno, Sacramento county.

Gardens near Corning, Tehama county, will ship 10,000 crates of tomatoes to Oregon and Washington.

The shipments of fresh fruits from the Sacramento Valley are almost 400 cars in excess of last year at that date.

Oroville hopes for the construction of an armory which will also afford exhibition room for a citrus exposition this fall.

The forestry service has a nursery for experiments with range grasses in the Klamath National Forest. Siskiyou county.

Placer county feels that she is getting the best of the mosquito pest on which a continuous fight has been made for some weeks.

Less than half the spring clip of wool has been sold by wool growers of Mendocino county. Prices have ranged from 15 to 19½ cents.

Farmers have secured the closing down of the big copper smelter at Winthrop, Shasta county, until smoke consuming device is installed.

Another fire to burn up a bunch of grasshoppers at Biggs, resulted in adding two stacks of hay and several grain fields to the conflagration.

The hickory and black walnut trees being tested in the Shasta National Forest reserve in Siskiyou county, have been seriously injured by frost.

An alfalfa grower at Elverta, Sacramento county, has lost twelve acres of alfalfa through the hunger of grasshoppers which completely cleared his fields.

The $300,000 change in the copper smelter at Kennett, Shasta county, has been completed and the farmers hope for complete control of the destructive fumes.

Owing to morning glory seed and other pests, large grain growers near Yuba City, Sutter county, have harvested their grain early and will thresh with the old style stationary threshing machine.

The American Olive Company of Los Angeles asserts that its shipments of California ripe olives have never been labeled "Southern California Olives," but go out simply as "California Olives." A large portion of these are bought at Oroville, Butte county.

Central California

Porterville is to have a new orange packing house.

The Turlock cannery will open about July 10th.

Farmers at Corcoran are busy installing rural telephone system.

Stockton is the latest with an agricultural course in its high school.

Tulare county bee-men are making a strenuous fight against foul brood.

San Joaquin Valley is to have better transportation service for its green fruits.

Tulare county bee-men report very small crop, but hope for big returns from the reduced output.

A mass meeting of farmers under the Modesto-Turlock Irrigation Ditch was held at Modesto last week.

A couple of Frenchmen recently arrived have installed an extensive mushroom plant at Santa Clara.

Porterville claims she is receiving satisfactory advertising because of her attitude, "No Japs in this town."

The Fresno County Agricultural Association has decided to hold its next annual fair the first week in October.

Mr. W. E. Sprott who has been manager of the Tulare County Fruit Exchange, has been endorsed for another year.

The United States Geological Survey is finishing detail drawings of the Sierras of eastern Fresno and Tulare counties.

The first car load of dried apricots out of Kings county was about the end of June and is said to have been the first in the state.

The Calfalfa Cream and Butter Co. has filed articles of incorporation with the clerk of Stanislaus county and will establish a creamery at Turlock.

One of the Cultivator field men working in Kings county reports that Hardwick has promise of being one of the most up-to-date little towns in the state.

The board of directors of the Tule River Citrus Association elected for the coming year are: W. E. Sprott, Henry Anthony, Frank Wilson, Hobart Webster, F. W. Velie.

Many Kings county bee-men have sold their extracted honey at six cents a pound. The output will be between six and eight carloads. The price last year was four and a half cents.

Some Kings county ranchers have tried the experiment of drilling alfalfa seed instead of the usual broadcasting, one farmer drilling 160 acres. It has proved remarkably successful.

A Cultivator representative working at Lemoore writes; "If you want to see busy people, come to Kings county and watch the apricot growers. The crop here is fairly heavy this year."

The sugar factory at Spreckels, Monterey county, has nearly completed its overhauling, and is prepared for the biggest crop of beets which has been produced in Monterey and Santa Cruz counties.

Southern California

Cotton prospects of the Imperial Valley are the best.

Redlands had a serious field fire caused by sky rockets.

Riverside Driving Club will give races on Thanksgiving Day.

La Habra, Orange county, reports grain and hay output larger than last year.

Imperial Valley grape growers are receiving as high as $50 per ton for table grapes.

Garden Grove, Orange county, reports beet crop fine with promise of large tonnage.

The site has been purchased for the Anaheim sugar factory and work will begin at once.

Firebreaks which have been constructed in the San Bernardino mountains are declared to be in excellent condition.

The warm spell of last week did but little damage to the orange crop and the estimate now is for a very large crop.

Lemon growers say this is one of the best years they have ever experienced as to prices. The output has been light.

The butterfly pest in the alfalfa fields of the Imperial Valley is so serious that concerted action will be taken to eradicate it.

Farmers of Imperial Valley are elated over the million dollar appropriation which will make possible the control of the Colorado.

A banquet was tendered to G. Harold Powell of the Deparment of Agriculture by fruit growers at Riverside during his visit to that city.

The grape marketing season is on with the grape growers of Coachella Valley, Riverside county. Most of the growers co-operate in the marketing.

A thorough examination has been made of the Little Bear Valley dam by engineers who report there is no danger whatever of the dam giving way.

The voters in the Newport section of Orange county have formed a drainage district comprising some 300 acres of land. A bond issue of $25,000 will be made.

There is an effort being made to put out the so-called winery which has been operating for years in Chino, San Bernardino county. It is charged that the winery is more of a booze joint than a legitimate winery.

Nothwithstanding part of the orchardists who have properties near the Colton Cement Works have settled their differences, many others are still contending for remuneration because of damage from dust from the works injuring trees.

Orange county apricot drying camps have closed down. The ripening of the fruit was much earlier than heretofore. The shortness of the crop may be judged by the fact that one camp which last year had 70 to 80 pitters ran this year with from six to eight. Most careful estimates are that crop will be less than one-third of normal. Buyers are offering eight cents, but all growers are refusing less than ten.

The Coast

Seattle is shipping extensively of Bartlett pears to Alaskan ports.

North Yakima will ship carload lots of peaches to Atlantic Coast points.

Quotations on fresh candled ranch eggs at Portland, Oregon, are 27 cents.

Alfalfa seed growers of Yuma Valley, Arizona, propose to standardize their output.

It is now estimated that it will be fully two years before Arizona becomes a state.

The Montana hay crop has been almost entirely ruined by adverse weather conditions.

A pre-cooling plant has been built by the fruit interests of North Yakima, Washington.

A forest fire at Maco, Arizona, extended over 50 miles of mountainside and destroyed a ten-stamp mill.

Three thousand acres will be brought under irrigation by a development scheme near Bonanza, Oregon.

A rumor started that the great Laguna Dam was in danger of immediate destruction, was without foundation.

The governor of Moro Province, Mindanao, Philippine Islands, has asked for 75,000 pesos for irrigation canals.

Farmers of Gilliam county, Oregon, have formed a co-operative farmers union for buying supplies and selling products.

The Interstate Fair and Exposition will be held at Denver this fall and promises especial attention to irrigation topics.

Experts are studying the life and habits of the "rhinoceros beetle" which is infesting the cocoanut trees of the Philippine Islands.

Agriculture in eastern Washington will be given an uplift by the recent ruling of the Interstate Commerce Commission for a 25 per cent freight reduction.

An agricultural school for the pagan children of the Island of Mindanao in the Philippines is planned at Zamboanga. It will take boys from twelve to twenty years of age.

A combine of power plants has been formed by the most extensive public service corporations of the Northwest, in a corporation with seven and a half millions of capital.

The Yuma Indians do not like their allotments under the Laguna Dam irrigation scheme, and will send a committee to Washington to place their grievances before the President.

The large sugar plantations of the Hawaiian Islands which are now held by large interests under merely nominal rent to the government, are to be sub-divided and made accessible to homesteaders.

Owing to shortage of labor in the grain fields of the Inland Empire of eastern Washington, farm hands are organizing a labor union and demanding $3.50 for eight hours work. Sack sowers and forkers are demanding $5.00 a day, and machine men $10 to $12 a day.

Coulson's

EGG FOOD

If you were going to erect a large building, you would consult an architect—if you wanted some legal papers drawn up, you would go to a lawyer—because these men have made a special study of their respective professions.

The same principle applies to the feeding of your chickens. Presumably you have not the machinery or formula for making an egg food so that it will be just what your hens need.

That's why you should buy COULSON'S EGG FOOD. It is the result of years of study—it is scientifically mixed by experts with the right proportions of the various ingredients to give a balanced ration.

COULSON'S EGG FOOD means a healthy stock, with great laying power and eggs of quality. Saves you the time of mixing—provides a better feed—makes more eggs—means more profit, as COULSON'S EGG FOOD more than pays for itself, through making hens lay to their full capacity.

It is especially advantageous to use it at the present time, when the price of eggs is beginning to increase, and when also you are anxious to have your hens in good condition for the molting season.

Hens eat only what they like, but there are many foods they must have, and which must be mixed with their regular food so that they get the desired quantity. The only way the food can be mixed is by improved machinery—that's why you should feed COULSON'S EGG FOOD.

Get it at your dealer's; anyway send for our Catalog which tells about the familiar Coulson Products and gives valuable information about Poultry Raising.

Coulson Poultry & Stock Food Co., Petaluma

Germain Seed & Plant Co.,
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Its Beats the Bugs how

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We solicit short articles of a practical nature from the fancier and utility breeder, giving their experience with poultry. All inquiries pertaining to feed, management, disease and its prevention will be answered through these columns.

CARE OF YOUNG TURKEYS.

To begin at the beginning it is necessary to see that the eggs are properly cared for, because if they get chilled or remain too long in one position, they will not hatch.

Turkey hens, as a rule, lay their eggs on the ground. As they always begin laying very early in the season, it is best to remove the eggs from the nest, soon after they are laid, and replace with hen eggs.

Be careful not to let a turkey hen see you near her nest, because turkeys are very cunning and resent intrusion. We wrap the eggs in paper, and place in boxes, one layer deep. They are carefully turned every day, until placed for hatching. We have kept turkey eggs for four weeks in this way, with good results. But it is not advisable to risk keeping the eggs so long, when one can do otherwise. We never tried hatching turkeys in the incubator, because they would have to be kept in a brooder at first, and we do not think they would thrive.

The only advantage in hatching with chicken hens is that by so doing the turkey hens can be induced to lay several clutches of eggs in a season.

Year before last we hatched some of our turkeys with chicken hens, but will never do so again. The hens were set in fresh nests, placed where no other poultry had been kept, but the poults got very lousy and, in spite of the fact that they were thoroughly dusted with louse powder, every few days, they began to droop and die. The "louse killer" would not kill lice, but it made the turkeys sick every time it was used. Perhaps it was because it was bogus or had lost its strength. At any rate, it merely drove the lice from one place to another; wherever the powder failed to reach the lice were most numerous. As a last resort, after several of the poults had died, we began to use olive oil. Too much oil or grease will kill young poultry as fast as lice will, and sometimes faster. Some people use fresh lard but we prefer olive oil. The poults were carefully examined, and a very little of the oil was rubbed on, whereever lice were found.

Between the large quills on the outside of the wings, the lice were found in bunches. This is a favorite hiding place. Spread the wing and raise the short feathers on the "shoulder" or outside of the wing, directly over the large quills. If a young turkey has lice they will be found here. Also around the tail or wherever there are large feathers. One application is usually sufficient, unless the lice are very numerous. It is sometimes hard to locate lice, even when one is sure that they exist. The symptoms of lousiness are easily detected. The poults appear uneasy and often take fits, wheeling round and round. Sometimes they look pale and withered about the head and shanks, their wings droop and they refuse to eat. Our turkeys are never troubled much with head lice, but it is well to examine their heads, especially when they are first taken from the nest. A very little olive oil or fresh lard will kill all the lice and nits. But if none are found it is not advisable to use the oil. It is not a preventive and must reach the infested spot, in order to do the work. Never use kerosene or anything of the kind for lice. And, here is another bit of advice: Never use oil or grease of any kind upon a sitting hen. If she has lice use a good louse powder or sulphur. Oil or grease upon the shell of an egg renders it worthless, so far as hatching is concerned.

Last year we hatched and raised all our turkeys with the turkey hens and, for the first time in all our experience with turkeys not a louse was found during the entire season.

Those who have tried keeping young turkeys in small coops know that they seldom thrive. This is because a turkey cannot endure dampness or foul air. It is next to impossible to keep a small coop dry and clean in wet weather. Last year we kept our turkeys in a house. It was not originally intended for a poultry house, but it answered very well for the purpose.

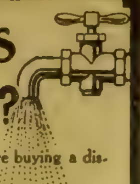
The house is 16x36 feet and is built upon a foundation of stone. There are two doors and four large windows. We put wire screen on all of the windows and doors, so that the poults could have plenty of fresh air at night, and also when kept indoors on rainy days. The building was made rat proof and whitewashed inside. As soon as the turkeys hatched they were taken from the nest, placed in a basket and then placed where they could have the benefit of the sun. Few turkey raisers realize that one of the first things that a young turkey requires is sunshine. It is time wasted to offer young turkeys food before they are forty-eight hours old.

The turkey house was arranged so that each turkey hen and brood had a separate apartment. The hens were placed in the house as soon as the poults were removed from the nest. The reason why we adopted this plan is that it prevents the poults being crushed to death in the nest, and also gives the hens a chance to get a little exercise sooner than they otherwise would.

As we are always careful to have the floors well covered with litter, it is easily kept clean. All doors should be left open to admit sunshine and fresh air. In very warm weather we opened the windows also. Turkeys cannot thrive without fresh air, both day and night. We found it very convenient to leave the doors and windows open and fasten the screens at night in hot weather.

The first feed is usually eggs, boiled hard and crushed, mixed with dry bread crumbled fine, then sprinkled with clean, coarse sand. Rice, when properly cooked, is good for young turkeys. The grains should be dry and separate. Chopped onion tops or dandelion leaves are added to the rations when turkeys are kept indoors; onions are added occasionally, even when the turkeys have free range. They are always relished,

How Much Is Water Worth?



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and we think they help to keep your poultry healthy. Pinhead oats or what is known as coarse steel-cut oatmeal, is better for young turkeys than corn. An occasional feed of corn bread is given for a change, but they are never confined to it. Corn is too fattening for growing turkeys. Wheat is good after they are six weeks old.

Over feeding is one thing that must be guarded against. We have always been inclined to feed too much and too often. When turkeys have plenty of range they require very little grain.

Last year we lost only two poults from disease. They died of indigestion, caused by over-taxing of the digestive organs. They were about the size of quails and had been growing well, when suddenly they got sick and died. It was discovered that they had bowel disease, and we at once decided to cut off the evening ration. We had been feeding twice a day. A little steel-cut oats morning and evening was all that they had been getting besides the insects, etc., found in the fields. However, we had noticed that their crops were very full when they came in every night. But as they always looked for feed, we never suspected that they were being over-fed until they began to die.

A turkey is a very greedy fowl and will eat whenever feed is offered, even if his crop is already full to bursting.

The evening ration was discontinued and that was the end of the trouble. No more turkeys died or showed any signs of disease. We raised the finest flock of Narragansett turkeys ever seen in this country. Our turkeys are always provided with plenty of pure water, charcoal, sand and other grit. No condiments are used.—St. Jo. Fruit Grower.

POULTRY QUERIES.

Enteritis.

Will you please tell me through the columns of the Cultivator what is the matter with my young chickens? They are about three months old; when they begin to be dumpy, droop, become very thin and finally die. On examination I find all the organs to look natural except the gall sac, which is enlarged about three times the natural size. We have about half a dozen affected thus, mostly pullets. Is the disease contagious.—Mrs. E. A. Martinez|

The symptoms suggest enteritis in some ways, which is a contagious disease according to some writers, but my opinion is that it is rather epidemic than contagious, and that the causes which produce it, will affect the entire flock just in proportion to their condition for "taking it." In short, it is like typhoid fever, and may be caused by impure drinking water, or unsanitary surroundings, as well as unsuitable food. In true enteritis the intestines are filled with mucous after the disease has run a certain course, and the absence of this symptom may mean that your birds simply have enlarged livers from too rich food and too little exercise and green food. Not knowing how they were fed, and how closely they were kept confined I can only guess at the probable cause of the trouble, but my own experience has been that where they were kept confined, fed too much grain and too little green food, and especially where they were not obliged to exercise in some way, that liver trouble of some sort was sure to follow. The cure is a teaspoon of castor oil or a liver pill to each patient, followed by a light diet. Charcoal is necessary in some form, but if one makes a mash too dark with it, they refuse to partake of it, so a good way is to toast bread until it burns slightly, and soak this in lime water, then beat up a raw egg and mix in it for a feed or two. Put baking soda in the drinking water, a teaspoon to each pint, and if possible to give them a clean grass run, do so, and if not procure green food of some sort in plenty. Clean up the premises thoroughly, inside their coops and out, and keep clean for prevention is better than cure, and especially be careful about letting the drinking water stand in the hot sun until foul. We all love a fresh, clean drink and should see to it that our chicks have fresh water several times a day this hot weather.

Dr. Sanborn says that nine-tenths of the liver trouble of chicks is due to giving a ration too rich in starch elements, and that too much white bread is one great mistake many people make in feeding young chicks. Boiled rice is said to be excellent for sick birds, but a standby of my own used to be raw egg and bran. The raw egg seemed to relieve the congestion and the bran was filling without being concentrated. The loose leaves from the hay mow where alfalfa is fed, is excellent, if boiling water is poured over a pail full and it is allowed to stand covered closely, over night. They eat this greedily, and it contains all the elements needed save a little meat or granulated milk. And they cannot overeat of it. Try it.—Mrs. Frank Metcalf.

Roup.

My chickens start with a little foam in the corner of the eye, then the nose begins to discharge and eyes get worse, swelling up and sticking together with white discharge. It is roup? I use coal oil in nose and throat and wash eyes with boracic acid, also permanganate of potash; put blue-stone in the water.—Subscriber, Orange.

My advice would be to do rather less than more in this case. As you have tried all the other cures, now mix 1 ounce listerine with 2 ounces of peroxide of hydrogen and bathe the head and eyes freely with this. Then give each bird a dose of quinine suited to its age, a full grown bird being able to stand one grain and younger birds in proportion. Should there be a rattling in the throat, give five drops of oil of eucalyptus on a lump of sugar, and feed soft mashes for a few days, composed mostly of bran and cornmeal, and seasoned with pepper pretty warmly. After they are cured, fatten them for market, and never use any of their eggs for hatching. The question that naturally arises now is, Of what use is it to fuss with them at all? You don't want to eat those birds yourself, and you surely would not offer for sale what you consider unfit for your own table, so unless you wish to keep them just for the eggs they lay for the table, (which eggs will be wholesome after they are perfectly well, and they won't lay before), use the hatchet just as soon as the eyes swell shut. Then clean out and disinfect your whole chicken plant, plow the ground and sow some quick growing crop like barley on it, and give the birds range on other soil until this is done, if possible. The growing crop sweetens the ground as nothing else can do, but if impracticable, then remove several inches of the top soil, and replace with fresh dirt or sand. Be sure not to crowd the birds at night, as they get too warm and take cold upon being released in the morning. Besides, too much heat at night weakens their constitutions as nothing else can do.—Mrs. Frank Metcalf.

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These hens and pullets are all young and are standard stock, all are pure white and healthy. If you need hens or pullets of the White Leghorn, right now is the time to get them. By September they will be selling at $1 each or more and will be practically impossible to obtain.

We are selling three-months-old Buff Orpington pullets and Rhode Island Red pullets at $9 per dozen. Write us for any kind of grown poultry. FREE 32-page book mailed on request. We are still selling 10,000 chicks per week.

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General Agriculture

BUSINESS AND BUSINESS EDUCATION.

By W. E Gibson, Pres. Polytechnic College, Oakland.

BUSINESS is the objective of modern life — the most stupendous paymaster the world has ever known. The volume of business is growing at a prodigious rate and if it is to be continued it must be conducted by trained minds. Business embraces every form of commercial activity, and its branches reach out to encompass the supreme problems of gigantic development as well as most minute detail in the humble office.

The most important business in the world is the preparation of young men and women to carry on the enterprises of the future, and the more thorough the preparation just that much is the measure of success. One cannot hope to combat the problems which are ever present if there has been no forethought, no preparation to meet the many contingencies which are continually arising in the commercial world. The many failures which are daily recorded against men and women may, in most cases, be traced to neglect of early life. Opportunities lost can never be recovered. The neglect of a business education will stamp itself indelibly upon the career.

In the past much of the so-called "education" has been acquired by studying what men have done who have long been absent from the present day world and its affairs. History of the human race; study of languages which have passed from current usage, and which are now called "dead languages"; analysis of a system of logic or the miscellaneous writings of other dead and gone men, have been called "education." A modern education is absolutely essential to a successful life, and the degree of success which is attained will depend largely, if not entirely, upon the kind of education which is secured. The learning of the past cannot be applied to the duties of the present. A business education gives young men and women the strongest weapons for the battles of life.

Business colleges, if properly conducted, serve as a great clearing house between the world of business and those who aspire to immediate employment and futures filled with opportunity. Our schools take the raw material of youthful energy and intelligence, and transform it into the scientifically trained business people who make business the success that it is. They weave into the minds of students the essentials of business as the manufacturer of cloth weaves his product from the raw material. A business education is to be preferred to any other form of education, because of its practicability. It is an insurance policy against adversity—an investment whose dividends are always paid in cash in any community.

The business college is a modern institution. "It originated in this country as a protest against the inefficiency of our system of education; as a protest against the failure of our American schools and colleges to fit young men and women for the business of life. These business colleges, if thorough, furnish their graduates with a better education for practical purposes than Princeton, Harvard or Yale." The real, practical, serious business college is, in reality, a commercial office embracing the various departments of business activity. It does not include merely one branch of business, but shows how each separate business is connected with every other business with which it is likely to come in contact. By instruction in the various branches of business the young mind is taught to grasp principles which are fundamental in every avenue of commercial activity. These principles form the foundation upon which every successful career is built and without them the young man or woman must grope blindly in the hope of finding something which may be mastered by the tedious process of unassisted application.

The young man or woman who desires to enter business, must have his card of admission. This consists in a mastery of business as it is found practiced in commercial houses throughout the world. While there may be differences in detail, the main features are the same in all offices.

Every young man and woman who has given the matter even the slightest consideration must have observed that there is a constant army of unemployed. They have missed their mark and lag in the world helpless, wretched and hopeless. The future offers nothing for them in the way of comfort and happiness. They have nothing to which they can turn their hands, for they were not trained to do the things that the world is anxious to pay to have done.

The one serious problem in young life is to get an education which will be of practical value, something that can be turned into the necessities of life, something that will make each one a useful factor in the world's progress. As the athlete trains for the field day events, so should the young men and women of today train for the many opportunities which are always waiting the one who is capable of grasping them. There are greater opportunities today than ever before. New enterprises are constantly coming into existence and the old ones are growing larger, requiring more employes to handle the business. The young man who can step into the position and at once grasp the situation is worth vastly more than the one who has to be accepted and taught the principles of commercial practice.

It is the duty of every parent to see that his boy or girl is given an education that will be of bread-winning value. No parent should handicap his children by a lack of knowledge. The demands are great at best, and with a lack of business ability there is but small chance of ever rising in the business world.

The term "business" is too often applied solely to city work, it is used to mean the office, the factory, or the shop. But there is a vast need of business on the farm. The man who tries to conduct his farm without knowing the principles of business is like the sea captain trying to navigate without a compass. Business tells which way the farm is going—whether for profit or loss. It enables the manager to stop the losses and increase the profits. It gives an exact accounting of every department and tells which part of the work is the most profitable, and which should be abandoned as non-paying. Whether you want your boy or girl to remain on the farm and take up your work, or whether you want them to enter the city, you should not fail to give that business training which will enable them to be of the greatest value.

Give the boy and girl a chance.

FLY RE-CHRISTENED.

"White Plague Fly" is the cognomen applied to the so-called "Typhoid Fly" by Professor William B. Herms, promoter of anti-fly campaigns, in describing the activities of musca domestica and proposing simple relief measures.

Apropos of this subject Professor Herms says: "The old theory that tuberculosis infection is chiefly caused through germs being borne on the air to the lungs has been displaced by recent investigations which prove clearly that the tuberculosis germ most commonly gains access to the human body through the walls of the digestive tract and is carried in the blood to the lungs or other vulnerable organs. In view of this fact, and in view of the house-fly's long established record as a carrier of disease germs of food, the title 'White Plague Fly' may be justly added to the long list of hard names already applied to this industrious pest.

"The flies will be too many for us so long as we do not prevent them from breeding. This, fortunately, is a simple matter. About 95 per cent of all our common house flies breed in manure piles; the rest in unscreened toilets, uncovered garbage cans, scattered horse droppings, any place, in fact, where moistened filth is accessible to flies. Fortunately the fly seldom travels more than a block or two from its place of breeding. Thus the neighborhood or the town that provides fly proof bins for all manure, and either covers or screens or cleans all other places of breeding will have a flyless summer time."

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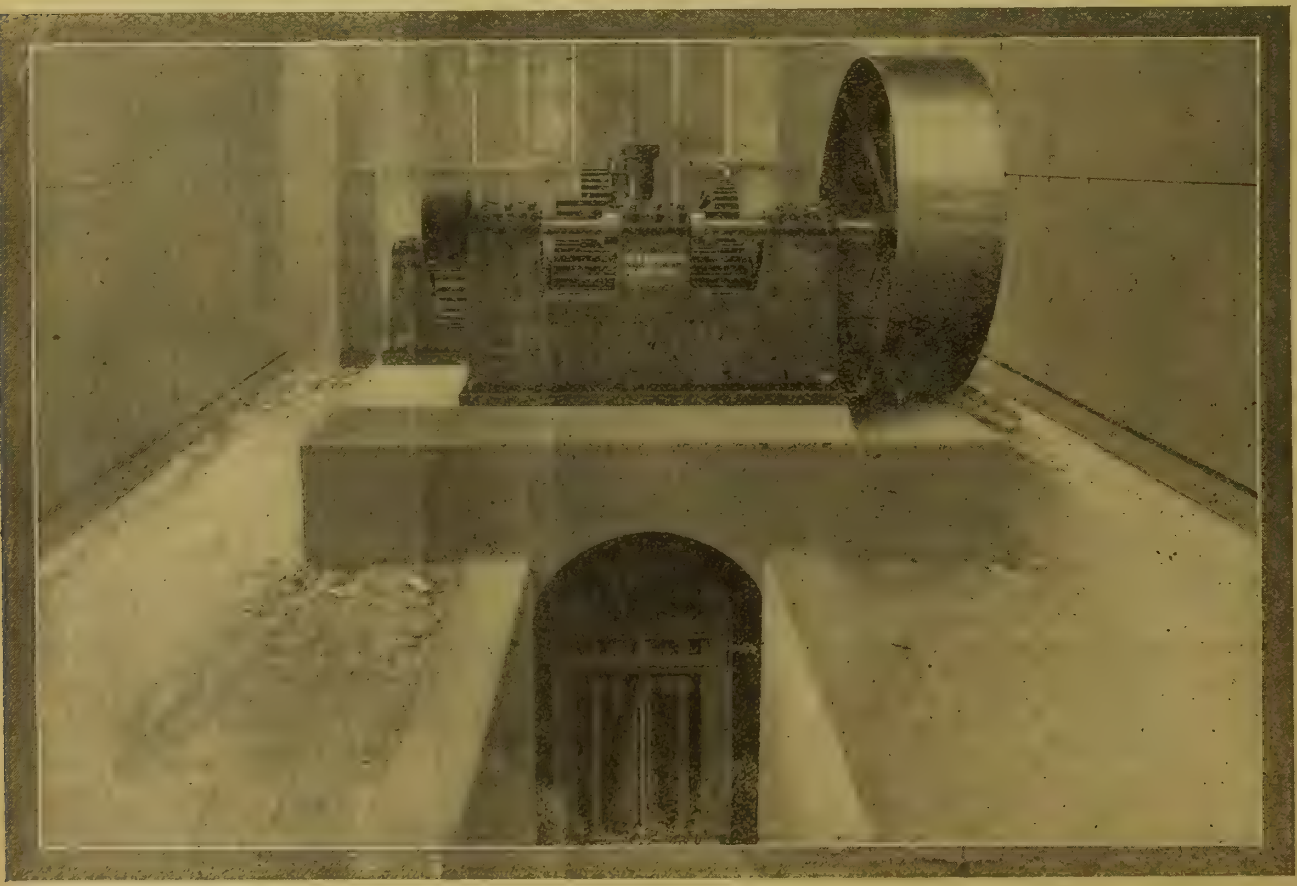

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Irrigation and Forestry

GREAT RECLAMATION PROJECTS OF COUNTRY.

SUPPLYING moisture to semi-arid and desert lands by artificial means is a problem of world-wide importance. It was practiced by the Arabians, Egyptians, Assyrians and Chinese long before the advent of Solomon, and it has since formed a part of the agriculture of the countries bordering on the Mediterranean sea. The ancient art had its origin in America in pre-historic times, with the Pueblo Indians, who inhabited portions of what are now New Mexico and Arizona, and their descendants were still cultivating the lands when the first Spanish colonists came from the south, several centuries ago.

A census today would show fully 250,000 farms in the United States under ditches, watering more than 15,000,000 acres of land. Colorado leads in the number of acres irrigated, California has the largest number of irrigators, while Washington has the greatest percentage in the number of irrigators. The science is also practiced in Canada, England, France, Italy, Japan, the Argentine, South America, Algeria, Australia, Switzerland, Belgium, Denmark, Bohemia, India, Spain and Scotland. It is estimated that more than 75,000,000 acres are under irrigation throughout the world.

Mormons settling on the shores of the Great Salt Lake, in Utah, were the first of the English-speaking people to make a systematic application of the principles of irrigation in the west. They turned the waters of the Wasatch mountain streams upon their holdings, the present site of Salt Lake City, mastering the art after years of effort. Priests of the early missions also made use of water on the lands in Southern California, where today may be seen the ruins of pretentious works built by the Indians. Placer gold miners in California utilized the water from their ditches for irrigation purposes.

The results obtained in Utah and California induced settlers in other states and territories to try the plan and small tracts of land were put under the ditches in Idaho, Washington and Oregon. The Indians in the Clearwater country, in Idaho, were, it is said, the first in this part of the country to use artificially supplied moisture in the cultivation of crops. The Rev. Henry H. Spalding, who came to the northwest with Dr. Marcus Whitman, mentioned this fact in his early letters to relatives in New England.

Less than 20,000 acres were under irrigation in the United States in 1870 but during the next decade the acreage was increased to 1,000,000. The federal census shows 3,631,481 acres on 54,136 farms under the ditch in 1889, the area doubling the following decade, due largely to the extension of the existing canals. A special census in 1902 showed 120,008 farms with a total of 9,034,526 acres under irrigation. Congress adopted the national irrigation act that year, which saw the beginning of the construction of work under the control of the secretary of the interior, the fund being derived from the disposal of reclaimed lands. The law provides that the cost of the work is to be apportioned to the land and refunded to the government in ten yearly installments without interest.

Twenty-five projects completed and upon which the government is now at work will, when fully developed, add 3,198,000 acres of land to the crop-producing area of the United States, while thirteen others held in abeyance until the completion of the former, will reclaim 3,270,000 acres, making a total of 6,468,000 acres reclaimed at a cost of $159,621,000.

The largest of the projects in Washington are in the Yakima valley, as follows: Sunnyside, 90,000 acres, cost. $1,600,0000; Tieton, 30,000 acres, cost $1,500,000; Wapato, 120,000, cost $1,500,000. The Okanogan will water 8000 acres at a cost of $500,000. Other projects contemplated will add 400,000 acres to the state's crop-producing area.

Government projects in Idaho are the Minedoka, 160,000 acres, costing $4,000,000, and the Payette-Boise, 200,000 acres, completed at a cost of $3,000,000. The latter covers the largest single tract under irrigation on the continent at the present time. Oregon has the Umatilla, 18,000 acres, costing $1,100,000, and the Klamath, extending into California, 120,000 acres, costing $3,600,000.

The projects in Montana are the Huntley, 33,000 acres, costing $900,000; the Sun river, 16,000 acres, costing $500,000, and the Milk river, including the St. Mary, 30,000 acres, in Montana and North Dakota, will cost $2,700,000. The Blackfeet will water 37,000 acres in Montana, where will also be built the Flathead, 130,000 acres, and Fort Peck, 75,000 acres.

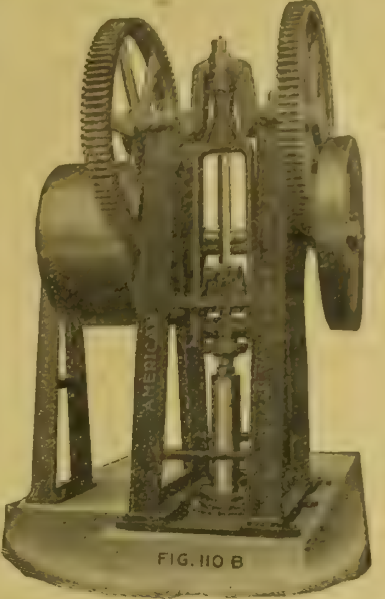
Salt River project in Arizona will water 200,000 acres, while the Yuma in California and Arizona will care for 100,000. Other projects are the Uncompahgre, Colorado, 150,000 acres; Garden City, Kansas, 8000; North Platte, Wyoming and Nebraska, 110,000; Truckee-Carson, Nevada, 200,000; Hondo, Carlsbad and Rio Grande, New Mexico, 45,000; Buford, Trenton, North Dakota, 40,000; Belle Fourche, South Dakota, 100,000; Shoshone, Wyoming, 100,000, and Strawberry Valley, Utah, 35,000.

Several millions of acres of lands will also be covered in Montana, California, Washington, Colorado, Arizona, Idaho, Texas, Nevada, New Mexico, Oklahoma, Wyoming and Oregon, as soon as the funds are available.

More than 10,000,000 acres of lands are under private plants in various states where plans are now under way to put 5,000,000 acres under the ditch during the next three years. If these projects are carried out the Horse Heaven country in Washington, will contain a single tract of 600,000 acres, watered at a cost of $15,000,000. The Canadian Pacific project in the Bow River valley, east of Calgary, Alberta, upon which work started in 1904, will cover 3,000,000 acres at a cost of $5,000,000, making it the largest single tract on the continent.—Ex.

Logan and mammoth blackberries in Sonoma county have been affected with fungus which acts upon leaves somewhat as shot hole fungus does. It has affected the quality and quantity of the fruit. Prof. Ralph E. Smith recommends the use of Bordeaux as a preventive of the trouble.

We Have Abandoned the Two Stroke Pump



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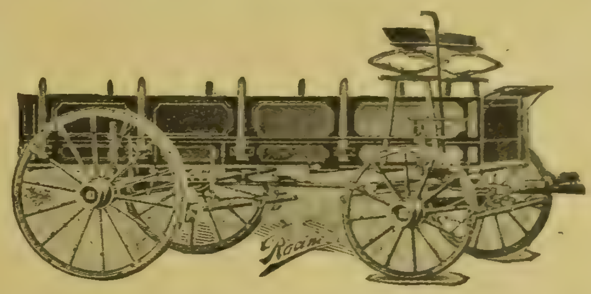

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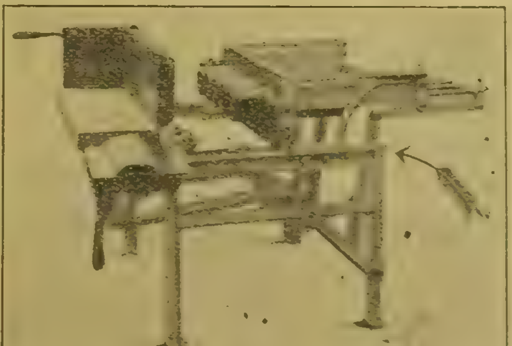

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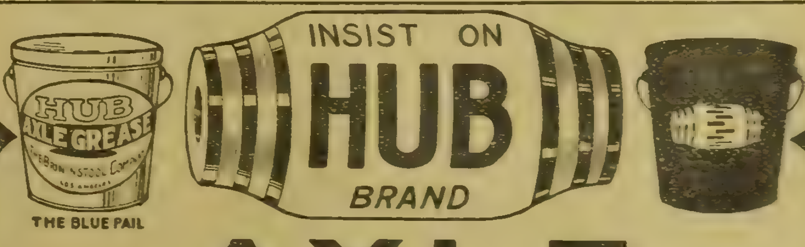

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Is the title of a booklet (briefly put) that I have written and just published. If, in the past, your hens have not laid well during the winter time, when prices of eggs were high, and you can welcome bona-fide, practical information and instructions that will tell you honestly just how to feed and care for your hens at less expense, that will positively induce them to lay eggs during the winter months, send One Dollar P. O. Money Order to me and I will mail to you, postpaid, one copy of the above mentioned booklet. L. D. HADLEY, 123 South Los Angeles St., Los Angeles, Cal.

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Legal

Edw. L. Payne, attorney, 301-304 Douglas Building, Los Angeles, will answer legal queries in this department.

Immediate mail replies cannot be given except where fee to Mr. Payne is paid. When replies are wished in Cultivator address query to 115½ N. Broadway, Los Angeles.

Attaching Income.

Can one secure by law housekeeper's wages where a man has no real estate, but is working on a salary which is more than enough to support his family?—Subscriber.

If the only income the man has is his salary, his earnings for the thirty days previous to the time of attachment are exempt, unless the claim is for necessaries of life furnished him or his family, so, the housekeeper might possibly collect by attachment, or she might obtain a judgment against her employer, which would be good for five years, and hold it in hopes that the debtor might obtain some property during that time, upon which she might levy.—E. L. P.

Water Appurtenant To Lands.

Can a water right be separated from land secured from the government under the Desert Act? Where land has been so secured and water developed can this land be re-sold and water right reserved, or does the water right go with the land indefinitely?—Subscriber, Wasco.

The inquirer does not specify what kind of a water right he has reference to. If it is a right held under a co-operative irrigation company, or other corporation formed under the laws of the State of California for the purpose of furnishing water, it, in all probability, is made appurtenant the land, and a part of the land to which it attaches. If it is a right which the owner of the soil has himself created or developed upon the same or adjacent land, I have no doubt that it could be sold independently of the land. The Desert Act makes no reference to the disposal of water rights, but is confined to the method of acquiring the land itself.—E. L. P.

Collecting Damages.

Can I secure compensation for carelessly knocking down seven-month filly by team driven in center of road? Driver did not slacken as he approached colt, the pole struck it, and horses were allowed to gallop while both wheels passed over its body. Colt died at once. This was November 29th last. Is it too late to start suit for damages?—Subscriber.

No, it is not too late to commence suit for the death of your colt, and if the driver of the team was careless. as you say, you should recover damages.—E. L. P.

Use of Common Ditch.

"A" owns 35 acres and sells five at lower end to "B" with water right through his land by ditch or pipe. Later "A" sells ten acres adjoining "B" to "C" and "C" then sells five acres to "D." All use water from the same ditch, making their own d[illegible] where they like. The gates they use do not fit well and leak. They also leave cuts open. Should "A" have to fill in cuts or bank up gates after owners of lower land are through irrigating?—Subscriber, Inglewood.

The party last using the ditch should use it in a reasonable way, and leave it in such a condition that a party having the right of subsequent use would not be put to any unreasonable amount of labor in order to enjoy the said ditch.—E. L. P.

RABBITS.

FOR SALE—EUREKA RABBIT WARren Co., 928 Valverde St., Los Angeles, Cal., Wright and King, props. 150 fine bred New Zealand hares and 200 fine bred Belgian brood does and stud bucks from $1.00 up. Your correspondence is solicited.

Queries and Replies

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Scutellista for Scale.

Replying to the question, as to proper time, to introduce scutellista. I would suggest that for the destruction of the present brood of black scale, it is already too late in the season to colonize this fine parasite, but for future benefits, the present time is most favorable. Scutellista can feed only upon the egg form of black scale, and this feeding is done only by the second or larval form of the parasite, so that the introduced fly which is to deposit beneath the black scale insects, her eggs from which these feeding larvae emerge, should be in the field just before or soon after the scale begins its egg deposit, which occurs for the most part in May and June. Most of these scales are now in full egg form, and upon rebudded and young, thrifty trees are in process of hatching, and will thus escape the newly introduced parasites, but there are always a smaller proportion of out-of-season scale, and through successive breeding in these belated scale, a small number of the parasites are carried over the fall and winter. Scutellista will not remain where planted unless black scale in egg forming condition are present but may seek other near-by pastures and thus be of value.—C. E. Bemis.

Rental for Dry Yard.

Kindly answer through Cultivator what would be fair rental of dry yards of half acre including use of racks and sulphur house, but no trays or boxes, for crop of apricots; also for the same dry yard with use of track, car and dipper for prune crop? What are eight-foot trays and 40-pound picking boxes worth for single crop?—C. L. K., Mountain View.

This query was referred to Mr. G. H. Waters of Pomona who has had wide experience in such matters, and he answers:

"A fair rental for half acre, including sulphur houses, for the apricot season, which is one month, would be fifteen dollars. I have rented ground to people and have also rented ground from people for this pur, pose, and that is the amount I have paid, and I would think that for the prune season the same amount would be a fair rental where there are no trays used. For the use of trays for sixty days I have always paid 2 cents apiece, and the same for picking boxes. For prunes they charge more for the use of boxes and trays, as they have to be washed before they can be used for anything else after the prunes have been on them.

Spiders on Curling Leaves.

I send leaves from small plum trees. This is second summer's growth. The leaves are curling badly, especially those near trunk of tree. They work towards the rib, some being curled together almost like a scroll. Many are occupied by small spiders and many leaves are filled with spider webs. Are they the cause of the trouble?—X., Los Angeles.

The spiders are in no way responsible for the general curling of the leaves. Spiders usually do, of course, select furled leaves in which to make their nests, but usually the curling is due to some other cause. It looks as though there was some trouble with the root system. Is it possible that the tree has been gophered? Or, there may be a superabundance of water. Without looking into the thing closely, of course, I am unable to say definitely what conditions may be present.—H. J. Quayle, Entomologist.

Canning Fruit.

Advise safest and best way to put up fruit such as peaches, Bartlett pears, plums, etc. Will they keep all right in screw-top bottles? I do not like cans. How can I put up tomatoes to keep them whole? Some say it is not necessary to put sugar with them. Can they be kept without sugar?—S. B., Modesto.

We will ask the housewives to give us information regarding points of canning. In a general way we may say that screw-top bottles will answer in place of cans providing that rubber packing is used so that air is absolutely excluded, as is the case with the regular fruit jars. Unless the tops of the bottles are more regular than is usually the case, there might be trouble in securing this air-tight condition.

As to the use of sugar with tomatoes, would say that they are usually canned without sugar. In fact, many housewives prefer to put up many kinds of fruit without sugar. It must be borne in mind that the principle of canning fruit is to thoroughly sterilize by boiling so as to destroy fungous spores or any bacteria present. If the cans are then sterilized, and are perfectly air-tight the fruit will keep as well if put up without sugar.

Pruning Young Peach Trees.

I have peach trees in second summer's growth which are sending out a large number of branches. Will it be advisable to cut some of these branches out of center of tree so as to give those in right location a better chance to grow? Will it hurt the trees to prune now?—B. E. H., Kingsburg.

Young growing trees should not be pruned to any extent during the growing period as it tends to check growth and forces the wood to throw out fruit buds, which is not desirable in such young trees. "Summer pruning for fruit, winter pruning for wood" is one of the oldest and truest of pruning adages. Of course if cross limbs are interfering with growth of good desirable limbs, they should be broken over or removed if necessary. "Thumb pruning" of the tips of undesirable limbs is a very satisfactory way of controlling growth of the tree and does not injure it. Bear in mind that the leaves are the lungs of the tree and should not be removed from young trees unless necessary.

Lippia.

I send specimen of plant which I believe is a bad weed. It started among my grape vines and I have been fighting it but it is very tenacious and increases by running along the ground and taking root.—A. J. H., Phoenix.

Specimen had the appearance of lippia repens except that the leaf was slightly different. When submitted to a botanist he stated that the plant was Lippia cuneifolia, a close relative to the lippia cultivated for lawns. It is a native of the plains from Nebraska to Mexico and Arizona. As it roots freely at the nodes it propagates itself very rapidly. It is not likely to prove troublesome.

Aphis—Spider.

I have pansies which are covered with what looks like red spider and they suck the life from the plants until they die. They first appeared on nasturtiums. These I pulled up and burned. Have tried on the pansy plants soap suds, wood ashes and sulphur, but these did not affect them. There are also green lice on the plants. They are not affecting other flowers.—J. W. S., Charter Oak.

If this is the true red spider or mite, a mixture of one-fourth lime, three-fourths best grade flowers of sulphur, should finish it, but it must be borne in mind that once red spider is apparent on plants, it is almost impossible to save those particular plants. The damage has been done, and it is probable that the generation of the spider that has done it has entirely disappeared. The time to kill the spider is before its work is apparent, by use of sulphur. The aphis may be reached by weak solution of tobacco extract; or strong soap suds even will surely fix them.

Drying Pears.

I have crop of Bartlett pears which are all very scabby. What use can I make of them to best advantage? Can they be dried?—H. B., Santa Cruz.

See our answer to query regarding scabby pears in last issue of Cultivator. That does not touch upon the drying, but will aid in saving next season's crop. This spraying is so simple that fine pears should be grown in so far as scab is concerned. If there are still fair pears on the trees, they may possibly be saved by spraying according to the directions given for Bordeaux spraying.

As to drying the pears. They command a good price and the market usually takes them readily. The most serious objection to the drying is that if there is an apiary near, the bees will take away almost the entire spread before they can dry. The pears are very sweet and seem to be most acceptable to the honey bee. We have seen drying unpeeled pears so completely cleaned up by a few hives of bees that only the skins remained on the trays. Pears are dried in practically the same way as other fruit, that is, halved, cores scooped out, sulphured and dried. A finer product is secured by peeling, but this adds so much to the expense that few attempt it.

Noxious Weeds.

Has California a law which requires land owners to keep their property free of noxious weeds? If so, what are noxious weeds? Is it the duty of county supervisors to keep the public highways free from weeds, brush, etc., or is it the duty of abutting property owners?—W. H. B., Tulare.

The horticultural law passed by the last legislature prescribes the duties of horticultural commissioners and gives power to the horticultural commissions to serve notice upon owners of land which harbors "Russian thistle, saltwort, Johnson grass or other noxious weeds." If the notice does not cause the owner to eradicate the noxious weeds, "it shall be the duty of the county horticultural commissioner to cause said nuisance to be at once abated by eradicating or destroying such diseases, insects or other pests, Russian thistle, saltwort, Johnson grass or other noxious weeds." The law then specifies manner of collection from the land for this eradication. The three pests, Russian thistle, saltwort and Johnson grass are specified, but as to what determines a "noxious weed" the law does not state. We think that would be easily proven in any court, however. Any persistent, pernicious weed which is injurious to crops and spreads from place to place would come under that law.

As to the power of the commission over public highways, we are at loss and have referred the question to the state horticultural commission. We do not doubt that the county supervisors have power over weeds on the highways, but whether the cost of eradication would fall upon abutting property owner or the county, we will ask the state commission to decide.

Dodder on Seed Bed Stock.

Can you recommend something which will kill love vine on seed bed orange trees? My seed bed is infested and it will take the entire bed if I do not take immediate steps to stop it. The bed looks as if a fire had passed over it.—Subscriber, Fullerton.

If the infestation is over only a small portion of the seed bed, we would destroy at once by burning trees and dodder together. That seems to be the only satisfactory way of completely eradicating the pest. However, if it is scattered or more or less infesting entire bed we would make an effort to control by spraying with sulphate of iron mixture. Sulphate of iron ten pounds, water 40 gallons, is sufficiently strong to kill the love vine. As to whether it will injure orange plants, we cannot tell you, and would advise careful experimenting.

Veterinary

Answers in this column by Dr. R. T. Whittlesey, are without charge. For immediate mail answer remit $1.00. In writing questions give full symptoms or particulars of injury of animal.

For Burns.

I have a horse that was burned on the neck and back when my barn was burned. What shall I do for the burn to bring the hair back, or will it come in again?—O. W., Fillmore.

There is nothing that can be [illegible] on a burn to make the hair grow if the roots have been killed. If burn is raw use a solution of sulphate of copper or a powder of dry zinc oxide, but if healed over, keep the skin [illegible] with vaseline.—R. T. W.

DR. WHITTLESEY'S VETERINARY REMEDIES.

These are not ordinary mixtures but are from well tried formulas, used in an extensive practice in Southern California for nearly a quarter of a century. Dr. Whittlesey's Sulphur Arsenical Salve for deep fistulous or ordinary chronic, indolent sores such as. "Poll Evil," "Fistulas," "Quitters," "Thrush," "Scratches," "Warts," "Collar Sores" or "Sit-fasts," $1.00 per package postpaid. Printed directions. Dr. Whittlesey's Antiseptic Healing Powder forms a coating over raw surfaces, excludes air, flies and floating germs. Makes a cheap and convenient dressing for the many sores that occur to stock on the ranch. $1 full pound can postpaid.

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High Grade Stock of Best Strains.
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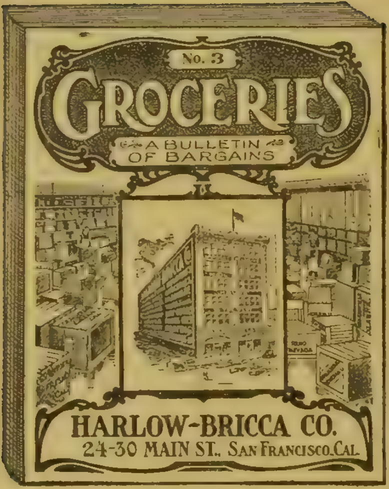

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Household Department

THE LEGEND OF THE RAINBOW.

By. B. F. Allen, Dedicated to the Pajaro Valley, California.

The land of the Pajaros,
Of warbles and trills,
Of beautiful flowers
O'er valley and hills,
Fragrant with pearl drops
Of dew in the morn,
For fairy's retreat
This valley was born.
In the time of the far
Distant years of the past,
Before rainbows were known
By reflection to cast,
'Twas the fairies who wrought,
For their loved queen's delight,
A garland of beauty,
Most gorgeous and bright,
And the plumage of birds,
With their carpets bright sheen
Of sweet scented blossoms,
Was declared by their queen,
The most perfect emblem
Of all at command,
Their God's gracious gift
To their own fairyland.
So they worked with a will
This garland to twine,
Of plumage and blossoms
And sweet columbine,
And their fair queen declared,
When the emblem was done,
"'Tis a token for only
The queen of the sun,
Our messengers to convey
This token of love,
Shall be our sweet songsters
Led by a snow white dove."
So they bore it away
Through the gloom of the night,
To the eastward where first
Darkness gives way to light.
And at morn when the sun
Casts its bright rays anew;
Its queen first beheld
This treasure jeweled with dew.
"Oh, where," she exclaimed,
"Neath heaven's blue dome,
Where, bright winged soarers,
Oh, where is thy home?
This treasure you bring
Whence had such beauty its birth,
Where of heaven's bequeath
Sweet angels of earth?
Is there a spot more favored
For heaven to place,
On earth's verdant bosom
Its treasure to grace?
Soar back to thy home,
To this land of sweet rest
With this message I send
To thy queen in the West
And tell her this garland
For all time yet to come,
Reflected shall be
From the rays of the sun,
And henceforth on earth
Shall appear the rainbow,
Its birth in this jewel
From her beloved Pajaro.

—Copyright, 1910 By B. F. Allen, used by permission.

THE NOTORIOUS JUMPING FROG OF CALAVARAS COUNTY.

(Concluded from last Week.)

"Well, this-yer Smiley had rat-tarriers, and chicken cocks, and tom-cats and all them kind of things, till you couldn't rest, and you couldn't fetch nothing for him to bet on but he'd match you. He ketched a frog one day, and took him home, and said he cal'lated to educate him; and so he never done nothing for three months but set in his back yard and learn that frog to jump. And you bet you he did learn him, too. He'd give him a little punch behind, and the next minute you'd see that frog whirling in the air like a doughnut—see him turn one summerset, or maybe a couple, if he got a good start, and come down flat-footed and all right, like a cat. He got him up so in the matter of ketching flies, and kep' him in practice so constant, that he'd nail a fly every time as fur as he could see him. Smiley said all a frog wanted was education and he could do 'most anything—and I believe him. Why I've seen him set Dan'l Webster down here on this floor—Dan'l Webster was the name of the frog—and sing out 'Flies, Dan'l, flies!' and quicker'n you could wink he'd spring straight up and snake a fly off'n the counter there, and flop down on the floor ag'in as solid as a gob of mud, and fall to scratching his head with his hind foot as indifferent as if he hadn't no idea he'd been doin' any more'n any frog might do. You never see a frog so modest and straight for'ard as he was, for all he was so gifted. And when it come to fair and square jumping on a dead level, he could get over more ground at one straddle than any animal of his breed you ever see. Jumping on a deal level was his strong suit you understand; and when it come to that Smiley would ante up money on him as long as he had a red. Smiley was monstrous proud of his frog, and well he might be, for fellers that had traveled and been everywhere, all said he laid it over any frog that ever they see.

"Well, Smiley kep' the beast in a little lattice box, and he used to fetch him down-town sometimes and lay for a bet. One day a feller—a stranger in the camp, he was—come acrost him with his box, and says:

"'What might it be that you've got in the box?'

"And Smiley says, sorter indifferent-like, 'It might be a parrot, or it might be a canary, maybe, but it ain't—it's just only a frog.'

"And the feller took it, and looked at it careful, and turned it round this way and that,, and says, 'H'm—so 'tis. Well, what's he good for-'

"'Well,' Smiley says, easy and careless, 'he's good enough for one thing, I should judge—he can outjump any frog in Calaveras County.'

"The feller took the box again, and took another long, particular look, and give it back to Smiley, and says, very deliberate, 'Well,' he says, 'I don't see no p'ints about that frog that's any better'n any other frog.'

" Maybe you don't, Smiley says. 'Maybe you understand frogs, and maybe you don't understand 'em; maybe you've had experience, and maybe you ain't only a amateur, as it were. Anyways, I've got my opinion, and I'll resk forty dollars that he can outjump any frog in Calaveras County.'

"And the feller studied a minute, and then says, kinder sad like, 'Well, I'm only a stranger here, and I ain't got no frog; but if I had a frog, I'd bet you.'

"And then Smiley says, 'That's all right—that's all right—if you'll hold my box a minute, I'll go and get you a frog.' And so the feller took the box, and put up his forty dollars along with Smiley's, and set down to wait.

"So he set there a good while, thinking and thinking to hisself, and then he got the frog out and prized his mouth open, and took a teaspoon and filled him full of quail shot—filled him pretty near up to his chin—and set him on the floor. Smiley he went to the swamp and slopped around in the mud for a long time, and finally he ketched a frog, and fetched him in, and give him to this feller, and says:

"'Now, if you're ready, set him alongside of Dan'l, with his forepaws just even with Dan'l, and I'll give the word.' Then he says, 'One—two—three—git!' and him and the feller touched up the frogs from behind, and the new frog hopped off lively, but Dan'l give a heave, and hysted up his shoulders—so—like a Frenchman, but it warn't no use—he couldn't budge; he was planted as solid as a church, and he couldn't no more stir than if he was anchored out. Smiley was a good deal surprised, and he was disgusted, too, but he didn't have no idea what the matter was, of course.

"The feller took the money and started away; and when he was going out at the door, he sorter jerked his thumb over his shoulder—so—at Dan'l, and says again, very deliberate, 'Well,' he says, 'I don't see no p'ints about that frog that's better'n any other frog.'

"Smiley he stood scratching his head and looking down at Dan'l a long time, and at last he says, 'I do wonder what in the nation that frog throw'd off for—I wonder if there ain't something the matter with him—he 'pears to look mighty baggy, somehow.' And he ketched Dan'l by the nap of the neck, and hefted him, and says, 'Why, blame my cats if he don't weigh five pounds!' and turned him upside down, and he belched out a double handful of shot. And then he see how it was, and he was the maddest man—he set the frog down and took out after the feller, but he never ketched him. And—"

[Here Simon Wheeler heard his name called from the front yard, and got up to see what was wanted.] Turning to me as he moved away, he said: "Just set where you are, stranger, and rest easy—I ain't going to be gone a second."

But, by your leave, I did not think that a continuation of the history of the enterprising vagabond Jim Smiley would be likely to afford me much information concerning the Rev. Leonidas W. Smiley, and so I started away.

At the door I met the sociable Wheeler returning, and he buttonholed me, and re-commenced:

"Well, this-yer Smiley had a yaller, one-eyed cow that didn't have no tail, only jest a short stump like a bannanner, and—"

However, lacking both time and inclination, I did not wait to hear about the afflicted cow, but took my leave."
—Mark Twain.

THE PICKLE SEASON.

We find that a great many of our readers desire some information regarding the home manufacture of pickles and condiments of various kinds, hence we devote this column to such matter. These are all tested recipes but while one might suit some folks another person might prefer a different formula, so take your choice.

Cucumbers for pickling should be small, not more than two or three inches in length. Put them in a tub, cask or barrel with a layer of salt and cucumbers alternately. Turn on boiling water and let them stand for ten or twelve hours. Take out from the salt water and turn on boiling water again and let them stand until the water is cold, then take them out and cover with vinegar. Pickles prepared in this manner will be crisp and brittle and require no alum or other injurious substance to make them so.

Another proved recipe is to pick each morning the small cucumbers as they become of sufficient size. Place them in a rather weak brine for three or four days, adding some mustard pods and horseradish leaves which will green them innocently and without communicating any poisonous qualities. After they have stood for the time named, take them out and drain them and then cover with vinegar for a week, at which time take them out and drain again, putting on fresh vinegar and adding mustard seed. Add ginger root, cloves, pepper and red pepper pods to suit the taste. This is a good recipe for those who prefer not to scald them. The vinegar should be changed once, because of the large amount of water in the cucumber which reduces the strength of the first vinegar placed on them.

Sweet Cucumber Pickles.

Select rather small, ripe cucumbers of uniform size. Steam them for three hours in a closely-covered preserving kettle, lining this and covering the cucumbers with grape vine leaves if they can be procured. To a kettleful of material allow two teaspoonfuls of powdered alum, scattering it over each layer of the cucumbers. Of water there should be only just enough to cover the vegetables. When the period of steaming is at an end drain off the water and throw the cucumbers into very cold water. Change this four times in four hours. Then weigh the cucumbers and allow for every pound of these one pound sugar and one-half cup of cold water. Heat these two together gradually, and when hot lay in the cucumbers. Let them simmer very slowly until tender; take them out and spread upon dishes, while adding to the syrup on the stove a pint of vinegar for every pound of cucumbers, and to every eight pounds of them a tablespoonful each of ground cloves, cinnamon and mace.

Mustard Pickles.

Take one quart of ripe cucumbers, cut in pieces one inch long, one quart of small green cucumbers, one quart of small white onions, one large head of cauliflower. Scald all in weak brine, and then place in weak vinegar water. Bring two quarts of cider vinegar to a boiling point. Take one small bottle of French mustard, six tablespoonfuls of dry mustard and one-half cup of flour. Add a little vinegar to the dry mustard and flour to make it into a paste and then add the French mustard. Dissolve two cups of sugar in the hot vinegar, also two tablespoonfuls of turmeric and one-fourth teaspoonful of red pepper. Add the mixed mustard paste to the hot vinegar carefully and strain if lumpy. Pour this boiling hot over the mixture and seal. If the brine water did not make the mixture salty enough more salt may be added.—Field and Farm.

THE CHURCH'S MILLINERY SECTION.

Because many of the feminine members of the congregation of a Baptist church in a southern city insist on wearing their hats in church, its pastor has set aside a certain portion of the church as the "Millinery Section," for use of these hat wearers.

The minister anounced that all women who come with large creations adorning their heads must either take them off or sit in the "Millinery Section."

The practice of women wearing hats during the services has been a subject of agitation for some time with the men attendants, and the pastor has from time to time openly opposed it. The minister commented rather sharply on the practice of wearing hats in church, and announced the new program for a "millinery section."

This is all right in its way, but to eliminate the hat is to eliminate the wearer. When it comes time for the separation of the sheep from the goats, the dominie will be charged up with the loss of souls and the dismembering of his church.

There is a moral influence in things which amuse and make us enjoy life. No one was ever spoiled by good humor; but tens of thousands have been made better by it. Fun is a food as necessary as bread.

Any one who has brought relief to distressed souls, who has lifted the burden from saddened, sorrowing hearts, has done as much good as any one of those who have been civilization builders.

Laughter is a token of saneness. Abnormal people seldom laugh. It is as natural to want to laugh and have a good time as it is to breathe. There is something wrong about a person who seldom laughs.

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Look Up

San Francisco and Los Angeles Produce Markets

Los Angeles Markets

LOS ANGELES, July 13, 1910.

Butter.

Lower grades of butter show an advance notwithstanding heavy receipts. Tuesday's receipts amounted to over 82,000 pounds.

Price to trade 2½c in advance of the following Produce Exchange quotations:

Extras	.31½
Firsts	.30
Cooking	.26½

Cheese.

Northern fresh	.16½@17
Anchor, large	.18
Oregon Daisy	.18½@19
Domestic Swiss	.23@26
Imported Swiss	.29@30

Eggs and Poultry.

Egg receipts have been very light for the past few days and sharp advances have occasionally been made. Market very firm.

Paying price f. o. b. L. A. is:

Local ranch candled	.33
Case count buying price	.29
Eastern fresh	.28
Eastern storage	.26

Dealers pay for live poultry f. o. b. L. A.:

Hens, per lb	.15@17
Roosters	.10
Broilers	.16@18
Turkeys	.22@24
Geese	.12
Ducks	.14½
Pigeons, doz.	.75

Live Stock.

The following quotations are f. o. b. Los Angeles, on all stock:

Hogs, 175 to 200 lbs	.10¼
Prime Steers	.5
Heifers	.4@4½
Calves, per lb	.5½
Sheep ewes, per head, shorn	.4.00@4.50
Lambs, per head	.3.50
Wethers, shorn	.4.00@4.50

Potatoes.

Wholesale prices are:

White Rose seed	.1.00
New potatoes, per ctl	.1.25

Onions.

Wholesale quotations:

Silver Skin, per box	.75
Yellow Danvers	.2.25
Garlic	.8

Vegetables.

Wholesale quotations:

Asparagus	.10
Artichokes, northern, doz	.50@90
Beets, sack	.90
Beans, green and wax	.4
Beans, Limas	.8
Bell Peppers	.15
Green Chilis	.14
Cabbage ,per sack	.1.10
Cucumbers, per box	.35
Celery, doz.	.1.00
Cauliflower, per doz	.1.10
Carrots, per sack	.90
Cream Squash, per lug bx	.1.00
Egg Plant, per lb	.14@15
Endive, doz.	.40
Green Corn, box	.55@65
Green onions, per doz. bunches	.20
Horseradish, per lb	.25
Lettuce, choice, per crate	.1.00@1.50
Leeks, per doz	.35
Peas, per lb.	.5½
Parsley, per doz. bunches	.25
Parsnips, doz. bunches	.15@20
Radishes, per dozen bunches	.10@15
Rhubarb, strawberry	.1.25
Rhubarb, crimson winter	.75
Spinach, per dozen	.20
Summer Squash	.35
Turnips, sack	.90
Tomatoes, box	.65
Water cress, doz. bunches	25@35

Citrus Fruits.

Valencias	.3.00@3.75
Grapefruit	.3.50@4.00
Lemons	.4.50

Fresh Fruits.

Wholesale prices on the market are:

Apricots, per box	.1.00
Alligator Pears, per doz	.4.00@5.00
Apples, Newtowns	.1.35@2.25
Apples, W. W. Pearmains	.1.50
Apples, New	.1.85
Alexander, lug	.1.85
Crabapples, lug	.1.25
Cantaloupes ,ponies	.2.00
Cantaloupes, standard	.2.25
Cantaloupes, Jumbo	.1.75
Figs, box	.65@75
Grapes, crate	.1.00@1.25
Pears	.2.00@2.50
Strawberries	.5
Raspberries	.6½
Blackberries	.6
Pineapples	.10
Logans	.4@5
Logans	.6
Nectarines	.1.50
Peaches, box	.75
Plums, box	.75@90
Prunes, box	.1.25
Watermelons, lb.	.1@2½

Dried Fruits.

Wholesale prices are:

Apricots	.12
Evap. apples, fy, per lb	.8½
Peaches	.5½@7½
Pears	.12
Nectarines	.10
Prunes	.3½@10
Plums	.12

Beans Dried.

Wholesale quotations:

Limas, per ctl.	.4.75@5.00
Pink, No. 1	.7.25
Black eyes	.6.00
Lady Washington	.4.75@5.00
Small white	.5.00
Garvanzas	.4.50
Bayous	.6.50
Lentils	.7.00

Nuts.

Wholesale quotations are:

No. 1 soft shell walnuts	.15
No. 2 soft shell	.10
Walnuts, budded	.16
Almonds, IXL, per lb	.16@17
Pecans, polished	.14@16
Peanuts ,Eastern	.7¼@7½
Peanuts, Cal.	.5@6

Honey.

Wholesale quotations:

Extracted water white	.8@8½
Extracted light amber	.7
Amber comb	.18
Beeswax	.30

Hay.

Buying prices f. o. b. cars L. A. are:

Barley hay	.10.00@12.00
Alfalfa	.10.00@12.00
Wheat hay	.10.00@12.00
Tame oat	.11.00@13.00

Grain.

Wholesale selling price f. o. b. Los Angeles:

Wheat, new per ctl	.1.80@1.85
Kaffir corn	.1.75
Corn	.1.80
Popcorn, ctl.	.3.00@3.45
Egyptian corn	.1.80
White oats	.1.85
Seed Rye	.2.10
Seed Barley	.1.35

Feed Stuff

Wholesale selling price f.. o. b., Los Angeles:

Cracked Corn	.1.85
Cracked Wheat	.1.95
Shorts	.1.90
Bran	.1.45
Oil cake meal	.2.75
Feed Meal	.1.90
Rolled Barley	.1.35

San Francisco Markets

SAN FRANCISCO, July 12, 1910.

Butter.

Butter is in good demand and selling readily. On Monday a few concessions were made on lower grades, but better grades holding strong. Market firm.

The official quotations of the San Francisco Wholesale Dairy Produce Exchange for today are as follows:

California extras, per lb	.29½
California firsts	.28
California seconds	.27

Cheese.

California flats, new	.12½@14½
Cal. Young American fy new	.15@16

Eggs and Poultry.

Eggs are practically the same as last week, though extras command aobut a cent more. Market very firm.

Official quotations of the S. F. Wholesale Dairy & Produce Ex. are:

Fresh ranch extras	.28
Firsts	.25½
Seconds	.23
Thirds	.20
Storage	.25½
Hens, per doz.	.5.00@10.00
Roosters, per doz.	.5.00@10.00
Fryers, per doz.	.5.00@6.00
Broilers	.2.25@350
Geese	.2.00@2.50
Ducks	.4.50@7.50
Pigeons	.1.50@2.25
Squabs	.2.50@3.00
Belgian Hares, per doz	.3.50@6.00

Live Stock.

San Francisco prices gross weight:

Steers	.3½@5
Cows and heifers	.2½@4
Hogs	.6@9¾
Calves per lb	.4½@6
Milk Lambs	.6@6¼
Wethers No. 1	.5
Ewes No. 1	.4½

Potatoes.

Wholesale market quotations:

River White, new, box	.50@75
Garnet Chile, ctl	.90@1.15

Vegetables.

Wholesale quotations:

Artichokes	.35@40
Asparagus ,per box	.50@1.75
Beans, string, per lb	.3@5
Beans, Wax	.2@4
Beans, Limas, sk	.50@60
Cucumbers, box	.75@90
Celery, per crate	.90@1.50
Chili Peppers ,per box	.50@65
Bell Peppers	.6@7
Green Corn, sk	.1.00@1.50
Egg Plant, per lb	.3@4
Lettuce, per crate	.4.50@5.00
Okra, box	.75@1.25
Peas, per lb	.3@5
Rhubarb, box	.60@75
Summer Squash, box 25 lbs	.40@65
Tomatoes	.20@1.25
Garlic	.3@4

Onions.

New Red, sk	.2.00@2.15
Yellow, ctl	.1.90@2.10
Silverskins	.1.90@2.15

Citrus Fruits.

Valencias	.2.00@3.50
Grapefruit	.1.50@3.50
Lemons	.3.00@6.00
Limes	.6.00@7.50

Fresh Fruits.

Apricots, canning, ton	.15.00@25.00
Apricots ,crate	.60@75
Apples, new, box	.35@1.25
Apples, Gravensteins	.1.25@1.50
Newtowns	.1.25@1.75
Crabapples	.50@65
Apricots crate	.60@75
Cherries	.85@1.10
Cantaloupes ,ponies	.1.75@2.00
Cantaloupes, Jumbos and st.	.2.00@3.50
Cantaloupes, rivers	.1.75@2.00
Figs, box	.75@1.00
Grapes, seedless	.1.50@1.75
Grapes, Fontainbleau, crate	.75@1.15
Grapes, Malagas	.75@1.00
Huckleberries, lb.	.15@17½
Pears, large boxes	.50@1.00
Bartletts ,wrapped	.1.50@1.75
Peaches, box	.40@50
Nectarines, red	.1.00@1.25
Nectarines, white	.90@1.00
Plums, box	.25@40
Tragedy Prunes, box	.75@90
Blackberries	.3.00@3.50
Raspberries, chest	.4.00@6.50
Strawberries, Longw., chst	.3.00@4.00
Strawberries, Malindas	.4.00@5.00
Strawberries, Banner	.5.00@6.00
Logans, chest	.3.00@4.00
Currants, chest	.6.00@7.50
Pineapples, doz.	.2.50@3.00
Watermelons, per doz.	.2.00@3.00

Dried Fruits.

Santa Clara prunes	.3½

½ cent premium for larger sizes.

Apricots per lb. Royal	.9@10
Peaches	.5@5½
Apples, evap.	.6½@8
Pears	.5@7½
Figs	.3¾@5
Nectarines	.5@6
Plums	.7@8

Futures on 1910—Apricots, 7@10; Peaches, 5@6; Prunes, Santa Claras, 3¾@4, ½ cent Prem.

RAISINS—1909 crop, f. o. b.; fancy seeded, 16-oz. cartons, 5@5¼c; do, 12-oz., 4½c; do, choice, 16-oz., 4½@4¾c; choice, 12-oz., 4c; 50-lb. boxes loose Muscatels, standard, 4-crown, 4@4½c; 3-crown, 3¼@3½c; 2-crown, 2½@3c; seedless Thompson, unbleached, 3c; do, bleached, 5@6c; Sultanas, unbleached, 2¼c; do, bleached, 4@4½c; Muscatels, unbleached, 2¼c; London layers, clusters, 2-crown, 85@90c; 3-crown 90c@$1; 4-crown, $1.30@1.50; 5-crown, $1.75@2; 6-crown, $2@2.50.

Nuts.

Walnuts S S No 1	.13@13½
Walnuts, hard shell	.13
Almonds '09 N P U	.13
Almonds '09 Nonp	.14½
Almonds I X L	.14
Pecans	.15@17
Chestnuts	.14@15
Peanuts	.5@6½

Beans Dried.

Limas	.4.50@4.60
Pink	.6.20@6.30
Black eyes	.5.60@5.75
Small white	.4.00@4.15
Large white	.3.90@4.00
Kidneys	.5.75@5.85
Garvanzas	.2.85@3.00
Bayo	.6.50@6.60
Horse beans	.1.50@1.75
Cranberry	.4.50@4.75
Red Mexicans	.5.90@6.10

Hops

Hops, 1909 crop	.11@14
Hops, 1908 crop	.9@11

1910 contracts now being made at 12 @15 cents.

Honey.

White comb	.14@15
Amber	.10@12
Extracted W W	.7½
Extracted light amber	.6½@7
Beeswax, per lb	.25@29

Hay.

Scott, Magner & Miller report: Arrivals of hay during the week have amounted to 3900 tons. This is a heavy increase over the quantity we have been receiving lately.

Purchasing in the country during the week has been very light; comparatively nothing has been bought for storage purposes, and for immediate shipment but very little has changed hands. The decided opinions of the consumers that the present range of prices are above the basis of what conditions warrant, have caused operators to act slowly so as to avoid losses.

There has been a little movement of export hay and somewhat of inquiry for coastwise shipment; but this trade has helped to relieve us of some little part of our overstock.

There is a little more movement in alfalfa hay. Inquiries for round lots are coming in, but the idea is that prices on this article also must be modified to be able to move large lots satisfactorily.

There are large quantities of straw offering in different parts of the country, but as the trade in this article is decidedly limited, if straw is baled as extensively as anticipated, it may be difficult later on to market same to any advantage.

Fancy wheat	.13.00@13.50
No. 1 wheat or wh and o	.11.00@12.00
No. 2 wheat or wh and o	.9.00@10.00
Choice tame oat	.11.00@12.00
Other tame oat	.8.00@10.00
Wild oat	.7.50@9.50
Stock hay	.5.00@6.00
Alfalfa	.6.50@10.00
Straw	.40@55

Grain.

Wheat No. 1	.1.42½@1.45
Barley, common	.98¾@101¼
Barley, fancy	.1.02½
Oats, white	.1.42½@1.47½
Rye, new crop	.1.50@1.60
Corn, large yellow	.1.55@1.60
Alfalfa seed	.16@18
Mustard brown	.3¾@4½
Millet	.2½@3
Flaxseed	.4½@5
Broom corn seed, per ton	.23.50

Feed Stuff

Bran ,per ton	.22.00@23.00
Feed cornmeal, per ton	.34.00@35.00
Cracked corn	.34.00@35.00
Ground barley ,per ton	.21.50@22.50
Rolled oats, per ton	.28.00@29.00
Middlings	.30.00@31.00
Oil cake, per ton	.38.50@40.00
Cocoanut cake per ton	.25.00
Mixed feed, per ton	.24.00@30.00
Shorts	.23.00@24.00

Deciduous Market

SACRAMENTO, July 9, 1910.

The California Fruit Distributors report:

The following gives number of cars of deciduous fruit shipped from all points in California for the week (7 days) ending Friday morning, July 8, 1910.

Cherries.

The shipment of this variety of fruit was closed on the 4th instant by shipment of three-fourths of a car, bringing the total shipment for the season up to 250½ cars.

Apricots.

Two and one-fourth cars. This concludes the shipment of this variety of fruit for the season, which has amounted to 290 cars, the largest shipment of apricots recorded in fifteen years.

Peaches.

Fifty and one-half cars. Good varieties of peaches are now going forward, consisting principally of Crawfords. This variety will continue through the greater part of next week and will be followed by Elbertas, late Crawfords and Susquehannas. No large quantities will be available for nearly ten days, but after that time the offerings will be ample to meet all requirements.

Plums.

Two hundred and seven cars. It will be noted there is a small falling off in shipments since our last report. There will be comparatively light supplies for the next week, after which time there probably will be a slight increase. Giant, Diamond, Wickson, California Red, Sugar, Gros, Kelsey, German, Fellenberg, Quackenbos, Imperial and Grand Duke will be the principal varieties going forward.

Pears.

One hundred and forty cars. The heavy movement of Bartlett pears from the Sacramento River is now on.

Next week will see the height of the movement, after which a decline may be expected, followed closely by shipments from Suisun and Vacaville. The fruit is of fine quality this year, of good size and free from defects and is giving universal satisfaction wherever received.

Grapes.

Four or five days of unusually warm weather have undoubtedly reduced the grape crop somewhat, some localities reporting a loss of 25 per cent. This is not, however, in sections that are noted as heavy producers, and while there has undoubtedly been some loss, there will be plenty of fruit left. Fontainbleau is the only variety now being offered, but Black Grapes should put in an appearance within the next ten days.

F. o. b. demand for California fruits has been larger during the past week than at any other time in the season and in fact has been excelled but once or twice in the history of the business. Fruit is not only meeting with good inquiry, but is giving universal satisfaction to purchasers.

Citrus Market

LOS ANGELES, July 13, 1910.

The heavier picking of the last few days has shown that the earlier estimate of the output of Valencias was very much too large. In fact, it is feared now that there will be a material shortage and possibly inability to supply the market's demand. This knowledge has caused a slight advance and an even firmer condition.

Lemons are also firmer, foreigns making an advance of fifty cents in quotations in New York markets yesterday. The auction markets on this page show that they are still clinging to the $6.00 to $8.00 price. A few other markets are even better.

Shipments.

Total shipments of citrus fruits since November 1, 1909: 26,414 cars, of which 22,781 were oranges and 3633 lemons. To same date last season: 32,701 cars, of which 27,947 were oranges and 4754 lemons.

NEW YORK, July 11.—Twenty cars sold. Market continues active but somewhat easier.

VALENCIAS—	Avge.
Old Mission Fy Chapman	$3.00
Old Mission Ch Chapman	4.90
Golden Eagle Sd Chapman	4.35
Tulip TCC Ex	3.15
Marguerite Xc CCU	4.35
Bunker Hill Sd CCU	2.00
Faneuil Hall	1.85
Taylor's Best	3.65
Taylor's Pride	3.15
Titus Ranch Fy San Marino GPA	4,50
El Toreador Sd San Marino GPA	3.55
Camellia Xf Red MO Dis	3.70
Redlands Pride	2.50
Golden Sceptre Or Rialto O Co	3.30
Mission Bells Fy AB Chapman	4.05
Memories Ch AB Chapman	3.20
NAVELS—	Avge.
Mahala LVWI Brown	5.40
Golden Cross OK Ex	5.10
Red X OK Ex	4.55
Upland Quail OK Ex	4.70
Yellow Beauties RH Redlands	3.25
Upland Quail OK Ex	3.70
Coyote OK Ex	3.15
SEEDLINGS	Avge.
Titus Ranch San Marino GPA	2.85
El Toreador Sd San Marino GPA	3.00
Sweets	Avge.
Mtn. Lion Xf Lyon Sons	2.70
Conqueror Xc Ind F Co	1.50
Citrus Belle Sd Inl F Co	1.25
Conqueror Xc Ind F Co	2.05
Citrus Belle Ind F Co	1.50
Golden Cross OK Ex	4.05
Our Pride Red High F Ex	2.35
Yellow Beauties F Ex	1.50
Triumph Or CCU	3.15
Faneuil Hall Sd CCU	1.85
ST.MICHAELS	Avge.
Eagle AF Ex	1.70
Yankee Doodle	1.15
Tulip TCC Ex	2.90
Golden Flower Xf Red GO Assn.	2.10

ST. MICHAELS HALVES—Sweetheart, $1.35—BLOOD HALVES—Heart Gold, $1.70—Grapefruit—Mahala halves. $2.85 Heart Gold, Triumph halves, $1.70. Goldenflower boxes, $3.00.

Philadelphia, July 11.—Two cars Valencias, two Sweet, 2 Mixed cars sold.

VALENCIAS—	Avge.
Green Crown, AGG Azusa	$2.40
Golden Orchard Fy Or, Ind	2.85
Citrus Belle Sd, Ind F Co	2.10
Rose Xf, Red OG Assn	4.55
Blossom Xc, MO Dis	2.20
La Belle Sd, Red MO Dis	1.65

SWEETS—Our Pride, $1.55; Yankee Doodle, $1.15; Golden Star. $2.20; Swallow, $1.75; Golden Sceptre. $2.75. NAVELS—Swallow. OK Ex, $2.30; Blue Jay, $2.25. BUDDED FLORIDAS—Red X, $1.85. ST. MICHAELS—Golden Flower, $3.40. HALVES—Red X, $1.80. GrapeFRUIT—Golden Flower. $2.70

CLEVELAND, July 11.—One car Valencias, one Sweet, one St. Michael, two lemons sold. Market higher on oranges, lower on lemons. Cooler.

LEMONS—	Avge.
Quail, OK Ex	$6.65
Pet, SA Ex	7.10
Greyhound. SA Ex	6.70
Coyote, OK Ex	6.40
Arab, SA Ex	7.10
Duck, SA Ex	6.40

SWEETS—Tiger, $3.55; Floral, $3.15. VALENCIAS—Setter, AH Arl, $3.70; Prairie Chicken, $3.45. ST. MICHAELS Eagle, $2.35; Yankee Doodle, $1.85. HALVES—Sweetheart, $1.50.

CHICAGO. July 11.—Lemons: The weather has been very favorable for some time and there is a good trade in this market. A steady feeling exists. There appears to be ample offerings. Boxes, California choce, $7; extra choice $7.25; fancy, 7.50; some common, 50c per box below quotations; Messina, $5.50@7.

Oranges—Sell moderately. There are fairly good offerings and a steady market is reported. Boxes, California Valencias, late, $3.75@4.50; Mediterranean sweets, as to size and quality, $2.75 @3.25.

PITTSBURG, July 11.—Ten cars sold, Market firm on good stock, lower on poorer grades oranges. Unchanged on lemons. Hot.

VALENCIAS	Avge.
LaBelle Sd Red MO Co	$2.25
Pomona SA Ex	3.50
NAVEIS	Avge,
Yankee Doodle AF Allesandro	2.30
Alleso AF Allesandro	1.75
Greenleaf ST Whittier	2.35
Moga AF Allesandro	2.40
Quaker Girl ST Whittier	2.70
SWEETS	Avge,
Naralimo Or Sparr F Co	3.20
Klondike	3.05
Del Oro Sparr F Co	2.55
Cougar Covina Ex	1.90
Magpie SB Rialto	2.30
Yacht SB Rialto	1.65
Circus Xc Sparr F Co	2.85
Circus Xc Sparr F Co	3.05
Red C Covina Ex	2.30
Yankee Doodle AF Allesandro	2.15
Big B SB Rialto	1.90

LEMONS—Kraus, $3.70; Ikes, $3.30; Lotengo Fy Sparr F Co, $1.80, $2.30; Circus Xc, $4.65. BLOODS—Red C Maltas, $2.05; Yankee Doodle, $1.25. HALVES—Red C, $1.35. BUDDED—Gavilan $.190. BLOODS RUBY—Tallyho, $2.95; Big R, $2.25.

BOSTON, July 11—.Six cars sold. Hot. Market is doing better.

VALENCIAS—	Avge.
Quail, OK Ex	$4.20
Hobo, AH Prenda	2.80
Shasta Daisy Xf.J. Curtiss F Co	1.60
Lark, OK Ex	3.45
Magnolia, Xf, W & Strong	2.95

NAVELS—Growers. $2.40, GRAPEFRUIT—Asyoulikeit, $2.70; Growers. $2.00; Hobo, $2.85. ST. MICHAELS—Squirrel, $2.45; Palm Tree, $1.95. HALVES—Shasta Daisy, $1.65. LEMONS—Grower's Lemon Grove FGA, $6.05; Gavilan, $6.70; Pet, S A Ex, $6.65.

BOSTON, July 11 (Delayed wire of Friday)—Five cars sold. Hot. The market is unchanged. VALENCIAS—Tiger, $3.00; Floral, $2.60; Stag, $3.15; Pointer, $2.25; Sunset, $1.65; ST. MICHAELS—Rey, $3.40; Tunnel halves, $1.20. SWEETS—Mtn Lion, $2.15. SEEDLINGS—Our Favorite, $2,00.

ST. LOUIS, July 11.—Cloudy. Market weak account weather. One miexd car and two lemons sold.

LEMONS—	Avge.
Squirrel ,AL Prenda	$5.75
Palm Tree, AH Prenda	4.80
Housewife, Riv Ex	4.35
Spuare, AH Prenda	4.80
Golden, AH Prenda	4.35
Pride of Cal., Riv Ex	4.45

VALENCIAS—Pony, $3.20. ST. MICHAELS—Dan Patch, $2.90; Pony, $2.85. HALVES—Dan Patch, $1.40; Pony, $1.20

CINCINNATI, July 11.—Warm. Market steady on oranges and lemons. One car oranges and two cars lemons sold.

LEMONS—	Avge.
Coyote, OK Ex	$4.70
Loma	5.10
Blue Jay, OK Ex	3.93

SWEETS—Sunset, Ex $2.40. GRAPE FRUIT—Royal, $2.65; Sunset, $2.50.

HAYWARDS POULTRY SHOW.

The first poultry show of the season was pulled off at Haywards on July 4th. It was one of the features of the Independence Day celebration, and the management are elated over its success. This is an innovation as to season of holding poultry shows, and it succeeded in attracting exhibits from nearly all parts of the state. Mr. E. J. Healey superintended and managed the show; Henry Berrar was judge of the poultry class and H. F. Whitman of Oakland judged the pigeons. There were some valuable and beautiful specials offered and the premium list was liberal. Haywards proposes to be one of the poultry centers of the state.

FUNGUS ON BERRIES.

(Continued from Page 34.)

as to the nature of this trouble, and to learn of any known remedy, the writer sent specimens to Prof. Ralph E. Smith, plant pathologist at the University of California.—C. H. Dwinelle.

"Mr. C. H. Dwinelle, Fulton:—We received your carefully prepared specimens of berry vines. The loganberry from Rev. Donald Cameron is quite badly affected with the leaf spot, as, in fact, were most of the other specimens, which also had the insect trouble. The berry leaf spot is caused by a fungous parasite and also affects the canes. I don't know that treatment would be of any use this year, as the damage has been done, but another year we should advise cutting out the affected parts and spraying with Bordeaux mixture, usual strength, before growth begins in the spring. It might be well to give them a spraying in the fall, just as the first rains come on, renewing the spraying throughout the rainy season as needed. Very little spraying has been tried on berries in this state to our knowledge, and if you carry out the treatment, we should be very glad if you would report as to results.—Ralph E. Smith."

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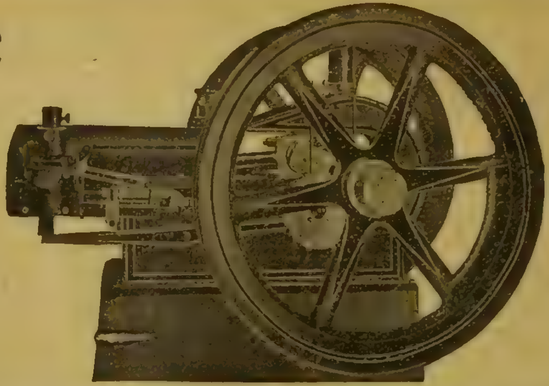

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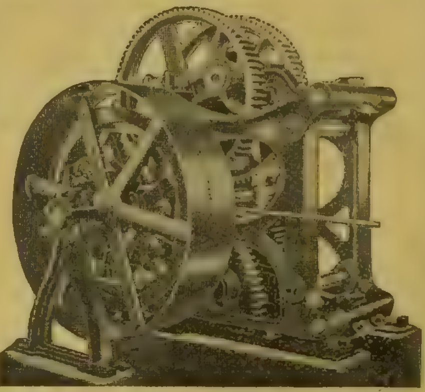

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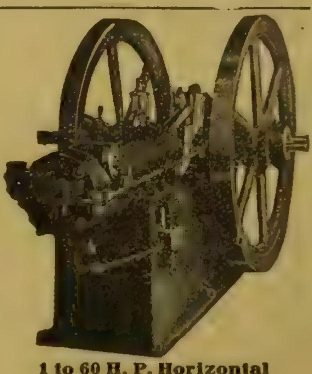

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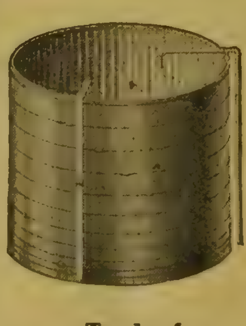

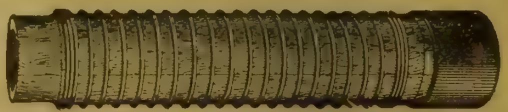

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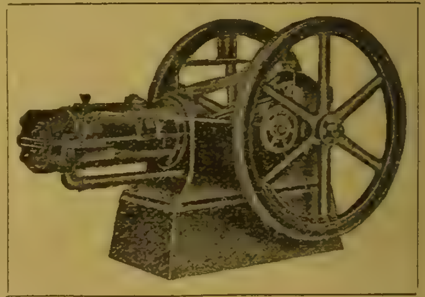

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Los Angeles July 21, 1910 San Francisco

Methods Used to Drive Away Jack Frost

The upper picture shows method of covering Italian lemon groves. The trees showing through are walnuts or other than lemons. In the winter, straw mats are laid over the frame work. The branches are tied to the frame and the fruit gathered from underneath similar to a grape arbor.

The middle picture shows the cord wood and fence rail method in Rogue River Valley apple orchards.

At daylight smudge pots are lighted to prevent action of sun's rays on the blossoms.

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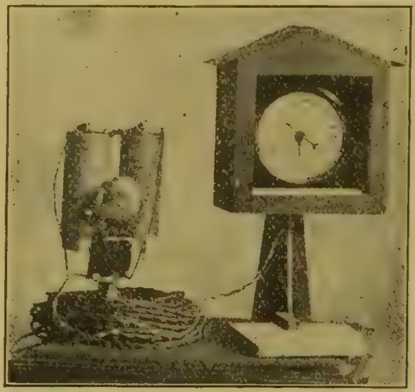

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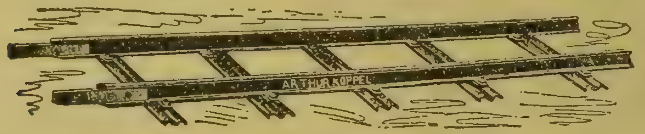

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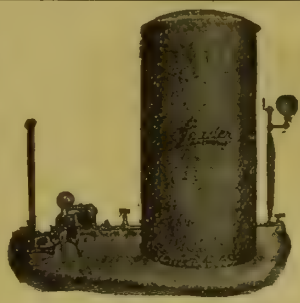

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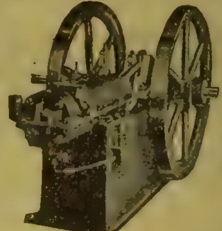

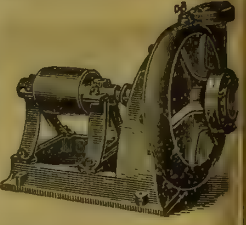

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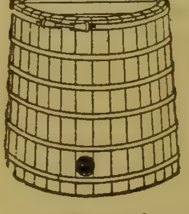

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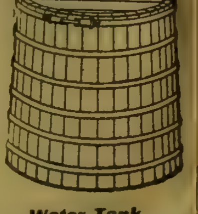

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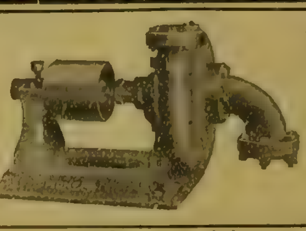

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California Cultivator

Vol. XXXV—No. 3 Los Angeles, California, Thursday, July 21, 1910 Subscription $1 a Year

Protect Orchards from Cold Weather Ravages

The Best Oranges in the World are Grown Where the Temperature May at Times Fall Below Danger Point. The Best Apples in the World are Grown Where Spring Frosts May Catch the Blossoms.

Mr. McAdie wishes farmers to fill out blank, copy of which may be seen on page 55. This is a valuable feature and will lead to some explicit information which Mr. McAdie will give later.

Seventy-five to 100 fires per acre should be provided, then one-fourth or one-half or all lighted as needed.

The Rogue River Valley reports that crops valued at from $500 to $1000 per acre have been saved at a total expense for the season of from $15 to $20.

Use the Weather Bureau more.

Colorado declares it saved $4,000,000 by firing this spring.

Ripe oranges require lower temperature to injure than green ones.

FRUIT growers who have had occasion to fight Jack Frost have sometimes complained that there was no definite or exact information at hand to aid in this field. Some who have newly entered into the fruit business have often expressed the feeling that there have been no investigations of frost protection. By referring back to magazines of eight or ten years ago, we find there was great interest in this subject at that time.

Earlier Investigations.

In a Cultivator issued in the fall of 1902 we find an apology for so many articles appearing in the Cultivator on frost protection for "several years back." One article in the Cultivator of 1901 gives information as to investigations of the Frost Committee of the Riverside Horticultural Club. This committee began its actual field work in Riverside on December 5th, 1897 under the generalship of J. H. Reed. We are told that at that time "accurate thermometers had been provided as well as other instruments. One grower had placed ten acres under firing with oil pots. An adjoining ten acres was supplied with straw flakes moistened. Another had smudge on ten acres. Still another had five acres furnished with fifteen coal baskets to the acre, and last, but not least, another had ten acres supplied with fifteen coal baskets per acre. Another had a five acre tract furnished with large evaporating pans."

In the same issue of the Cultivator is a report of a committee of orange growers of Ontario. This committee tested coal baskets and oil pots in the lemon grove of Mr. Little. The oil pots were supplied with crude oil with sacking used as a sort of wick. This committee reported favorably on both systems, but gave preference to the coal baskets, and gave information as to methods of work.

A House over the Grove.

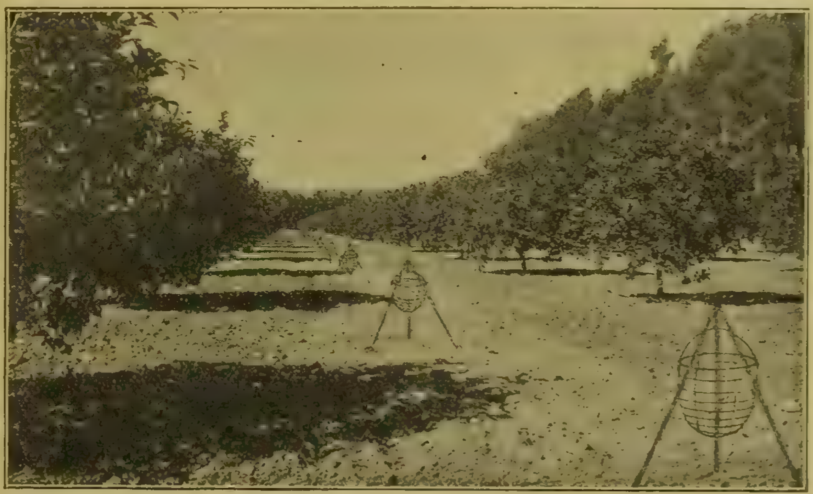
For several years following these preliminary experiments which began in 1897, considerable attention was given to frost protection. One method which was tried by Mr. Everest at Riverside was the covering of his entire orchard with lattice work. This proved expensive in construction, and while protecting from frost, was ultimately taken down. We may say that this style of protection is the only one used in the lemon orchards of Southern Italy. The best lemon sections of that country are visited practically every year by frost. A framework is constructed as depicted in the illustration on cover of this issue, and at the approach of the cold season mats of straw are placed over it, giving the requisite protection.

Partial Exemption.

The next few years following these experiments, fortunately, or unfortunately as the case may be, brought warm winters. These favorable seasons, together with hesitation to incur expense necessary for frost fighting, induced many to gamble on the probabilities of exemption, so that until this year most growers have neglected to make provision for frost insurance. The last two winters, however, have taught such a severe lesson that now many are asking where they shall turn to secure the greatest protection for the least money.

Methods.

Several methods have been tried, running all the way from irrigation in the hope that the latent heat of the water would modify the temperature sufficiently, to heating with 25 to 100 fires per acre. Running water through the orchards at night has been found to give a slight degree of protection, but owing to the fact that an entire community cannot do this at one time, it is not practicable. In addition, many prefer to store the water in the soil, giving clean cultivation at time of cold weather.



Coal Baskets Arranged in Orchard.

A coal basket built so as to hold ten to twenty-five pounds of ocal, together with proper amount of kindling and sometimes a little charcoal, is used probably as largely as any method. The oil pot, of which there are many kinds, is being used, especially in the deciduous orchards of the Northwest where it is necessary to protect against spring frosts at time of blossoming. Evaporating pans supposed to give off sufficient steam to modify the cold have never been used to any extent. Along the same line, the building of distillate or oil fires underneath a network holding wet straw or wet manure in the hope that this combination of heat and steam would be successful, has been abandoned. The use of wood or brush fires has never been followed in California, although in the Northwest, especially in the Hood River section, this seems to be almost universal. For a few years many orchards were stocked with briquettes composed of shavings and asphaltum or a heavy crude oil pressed into a compact mass, and said to light and burn readily lying upon the ground. This looked attractive owing to doing away with the necessity for providing stoves and appliances, but their use has been entirely discontinued. The same kind of fuel is now being used in a loose form in specially constructed stoves. We notice that in the Northwest another fuel is used, sawdust and coal tar. This is not so popular as the shavings saturated with crude oil and stored in paper sacks ready for distribution. Instead of shavings, one grower has made a success of using pine needles and other forest refuse. The use of eucalyptus litter saturated with crude oil has been discontinued because it burns out too rapidly.

Be Prepared.

If it is wise in time of peace to prepare for war, it is likewise wise in time of war (mth) to prepare for peace (of mind) when it is cold. It is none too early to take up the consideration of the possibility of a visit from Jack Frost in the coming December and January. The only possible exemption is secured by preparation long in advance. No matter how much concerned the grower may feel the day before a cold snap is promised, he cannot then get ready for the unwelcome guest.

To secure information from our practical growers we have asked a number to give us of their experience. Unfortunately, most of those to whom we applied have had no experience. Some have asserted that being in a frostless section they have no occasion to be concerned over the subject. Those who are so favorably situated will have no interet in the present article. We note that others who at one time felt the same assurance are now preparing for the emergency. Amongst those to whom we have applied for information are

O. B. Griffin, Superintendent, and F. W. Gray, Foreman, of the Leffingwell Rancho at Whittier, Los Angeles County.

The following facts were gleaned from a few minutes interview with these gentlemen. Mr. Griffin frankly admits that he was at one time one of those who "lived in the frostless belt," but today he knows the advantages of being prepared for the emergency.

The work on the Leffingwell Rancho has been peculiar in this, that firing is always begun at a much earlier stage than in most other orchards. The cold is never allowed to actually injure before the firing is commenced, but as soon as the temperature reaches 30 or 29, close watch is kept. If the leaves are covered with moisture and if the water in pans on ground by trees is not scaling over with ice, the firing is not begun. The water pans, by the way, are common tin piepans with a film of water kept over the bottom, and the moment these show the least formation of ice, the firing starts. The thermometer

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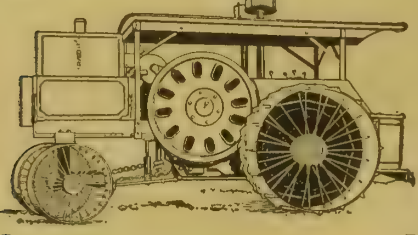

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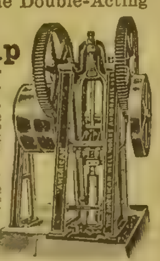

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serves only to point to the danger rather than to indicate time of beginning work. On this ranch a fuel of shavings and heavy oil has been used in the common smudge fuel stove. Mr. Gray, who has charge of the frost protection work, says that he has used oil pots but this year will use smudge fuel and the coal fires, a large number of baskets for which have been purchased. Number of stoves used to the acre up to this time has been 25, but it is proposed to supply 100 acres of lemons with 50 stoves or baskets for each acre. This will allow 25 fires to be started at first, holding 25 more in reserve.

One effect of the firing at the first indication of ice formation, is protection of the tenderest growth and keeping the trees in perfect condition. This may seem to many an unnecessary expense. In fact, it appeared so to the management of this ranch when they fired five different nights within one week, but the large output of lemons from those trees and the big prices secured from their sale this year, have made it one of the best investments possible. With the limited number of stoves employed, a change of four to five degrees has been effected.

The following valuable points were given to us by Mr. Gray: Fuel of shavings and oil is more liable to give dense black smoke and deposit smut on fruit if used soon after its manufacture. A less dense smoke and equal heat is secured if the fuel is mixed two or three months in advance and "cured." Again, the firing in the more exposed sections of the orchard is begun first; if possible, on the side from which the air is drifting, so as to carry the smoke and heat over the orchard. Some nights it was found that fires distributed along the outer edges of the orchard were sufficient to protect the middle where there were no fires at all. Thirty men lighted and had in full operation 2500 fires within 40 minutes from the time they were called out of bed. It is best to use the heaviest smudge of the night's campaign just before sunrise so that the orchard can be protected with a dense smoke to prevent injury from the early sunshine.

The following observations were made and forwarded to us by

R. H. Forbes, Director of Agricultural Experiment Station, Tucson, Ariz.

I will say, in connection with observations of our Mr. Simmons made at the almond orchard near Mesa, Arizona, of which he had charge for several years, that the following is a summary of his experience in that connection:

Smudging almonds was effective in preventing damage by frost. Various fuels were used including orchard litter, horse manure, cow manure, almond hulls, straw, old hay and coal tar.

Horse manure with straw enough to keep it from settling into a compact mass gave the best results. This combination gave a quick smudge while fine horse manure alone gave a good but slow smudge.

No sooting effect was, of course, observed upon the almonds which are hulled before marketing. Mr. Simmons' practice was usually to locate the fires 40 feet apart each way but on extremely cold nights he placed them at a distance of 20 feet each way.

The fire was usually begun when the thermometer sank to 35 degrees, this being governed to some extent by judgment, velocity of wind, etc. When the temperature was falling rapidly and the danger seemed unusually great, Mr. Simmons sometimes started the fires at 38 degrees.

It was found desirable to fire pretty heavily on the side from which the wind was coming and he so timed his operations as to have a good smudge in active operation by the time the freezing point was reached.

Mr. Blanchard, pioneer fruit grower of Santa Paula, Ventura county, has had wide experience in frost protection, and gives the following:

Nathan W. Blanchard, Santa Paula, Ventura County.

Several years ago I used oil pots but am now using coal baskets, and with their use have found no injury to appearance of the fruit by sooting. The number of fires per acre to be used to give best results depends upon the temperature. I have baskets under every tree and have never lighted more than three-fourths of them; generally one-fourth to one-half the baskets will suffice. The time to begin firing is determined not simply by temperature readings, but by condition of foliage, freezing of water in pans, etc.

Burle J. Jones, Phoenix, Arizona.

Mr. Jones writes that the nurseries and orchards of the company he represents at Phoenix will be protected the coming winter by the coal basket method. These have been considered the most effective in Arizona.

C. C. Teague, Santa Paula, Ventura County.

Mr. Teague realizes the seriousness of the situation, and is one of the pioneers in the study of methods of frost protection. There is no one method which is best for all sections. Each orchardist must study his own conditions and his own problems, and these problems must be solved to secure the best California fruit. Mr. Teague begins his work as soon as the thermometer reaches 30 degrees. He then watches condition of exposed water pans, and as soon as ice begins to form, starts firing. He also depends upon the appearance of leaves, especially the younger growth, in determining approach of danger point. He realizes the value of plenty of smoke over the trees, but that this is not sufficient to depend upon. One observation made by him is that the danger point is often passed very soon after the fires are all lighted, and under these conditions a rise of temperature of ten degrees has been registered. Mr. Teague has used both coal and oil, but now uses more largely the coal baskets, of which he has 16,000 for 160 acres. These he has used for the past ten years. Seventy-five baskets per acre he considers safest. He first lights one-third, then another third if necessary, but it is always desirable to save one bunch to be lighted to secure smudge from the freshly started coal just before sunup. In the Limoniera the only service of the thermometer is to warn the grower to be on the lookout. Actual firing does not begin till the tender growth and water in the pans indicate the necessity, and then only in the colder portions of the orchard.

Mr. Teague urges that the most essential thing in frost fighting in sections of small orchards is co-operation. The growers must unite and make a general campaign if best results are to be secured.

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Scientific Frost Observations

An Address Before the Claremont Club at Its Pomona Meeting. By Alexander McAdie of the U. S. Weather Bureau.

FOR fourteen years a progressive campaign has been waged by Fruit Growers and Weather Bueau officials in California, having or its purpose the protection of citis fruits from injury by frost. Varius devices for preventing injurious emperatures have come into estabshed use. Much satisfactory work as been done and the whole problem f protection developed so much that roadly speaking the question has eased to be one of local interest on- and become one of national imortance. If the general principles id down are correct in the case of itrus fruit protection, the same can e applied with success in other tates and with other crops, making f course due allowance for the hanged conditions and new occaions. Before taking up in order the hysical processes involved in frost ormation it may not be out of place recall the conditions of last winter n the San Gabriel Valley, or better et throughout Southern California. ear the close of December, 1909, e citrus fruit crop of the state had prospective yield of 36,000 car ads or more, about one-fifth of this rop being lemons. The low temperture of the first week in January aused a loss of perhaps 25 per cent f the crop. One peculiar feature of e experience was this, that during e whole winter there was no failre on the part of Weather Bureau fficials (the statement is made with ll due modesty)to give ample and rgent warning of the impending rosts. This may be considered as quivalent to half the battle won and a matter of proper congratulation hen one recalls the uncertainty of arlier years. Responsibility for the rge loss must in some measure be laced upon the growers themselves ho had become I fear somewhat ver confident, and so were not fully repared to meet the extreme condions of the first week in January. is a matter of regret also that ere was no systematic equipment f the groves with recording therometers and hygrographs, so that eliable temperature and humidity ata could have been obtained for se in future plans for protection.

ecure Instruments.

I believe it would fully repay the itrus fruit growers of California to urchase and install at least twenty hermographs and hygrographs in the an Gabriel Valley. Better yet I ink it would be to organize a rost Commission which could superise the installation of about twenty aturation Deficit Recorders, a new nstrument designed especially for he use of fruit growers; and the acion of which will be explained later. uch a commission composed of ruit growers, with the Weather Bueau officials as honorary members ould, I think, at an expenditure of 2000, throw more light upon the ovement of the air in the valley, he injurious temperatures, the daner spots and the most efficient agenies for preventing injury by frost, han we could hope for with our preent equipment for many years to ome. I do not hesitate to say that while in some years losses might be small there will come seasons when the savings accomplished by our better knowledge will make the expenditure seem but a drop in the bucket.

Temperatures.

The frosts which did the damage last winter were those of December 19, 1909, and January 3, 4, 5, 6, 7 and 8. In portions of the San Gabriel Valley the temperature fell as low as 24 degrees F. (4 degrees C.) or 269 degrees on the Absolute scale. I think this may be taken as fairly representing the air temperature six to ten feet above the ground on the morning of January 6th, about the hour of sunrise. As there are not thermograph records, the rate of fall after sunset, the time of the minimum and the number of hours when the temperature was below 32 degrees cannot be stated with precision; nor are there any records available whereby we could give the humidity of the lower layers of air. Of course new growth or a tender condition of the tree has also to be considered. Every orange grower knows that a tree that is backward or is not in a tender condition, other things being equal, will show less injury.

Again for reasons which will be developed later it is of prime importance to know something of the exposure of the chilled fruit to the sun's rays in the morning, that is to say, we must know something about the character of the rise in temperature after the frost. Such records during the period under discussion would have been of the greatest service. Lacking these we are compelled to rely upon data obtained in cities and towns. It is interesting to note that on the morning of January 6th the minimum temperature recorded at San Diego occurred about 6:30 a. m. and was 2.5 degrees above the freezing point. This was the lowest temperature recorded at the station since February 6, 1899.

The lowest temperature at Los Angeles was 33 degrees January 5, 6 a.m. The ground temperature was probably 10 degrees lower, that at San Bernardino was 23 degrees Jan. 6, Riverside 27 degrees Jan. 9, Redlands 25 degrees Jan. 6. Temperatures recorded on roofs of city buildings are from 6 to 10 degrees higher than temperatures in the groves. In some experiments made by the writer under typical frost conditions, it was found that the air about 3 feet above the ground had a temperature of 35 degrees while that of the ground was 32 degrees.

Condition of Tree.

As before stated much depends upon the condition of health of the tree and the age and character of the fruit.

In general the typical dangerous temperature curve will be about as follows. A nearly uniform rate of fall from early afternoon to midnight, a slight check about midnight and nearly constant temperature until about 4 a. m. Between 4 a. m. and sunrise a drop of 2, 3, or even 4 degrees. Then a slow rise half an hour

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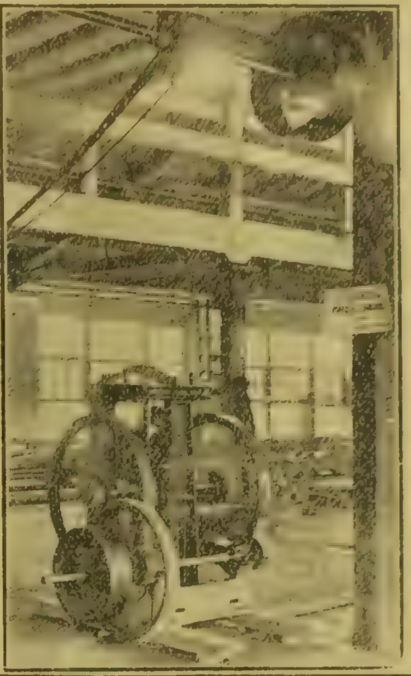

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We can supply you with any size and quantity of Standard Pipe or Casing—all new threads and couplings—all stock guaranteed first class. Write for Prices and Particulars.

BOSTROM'S $15.00 FARM LEVEL
With Magnifying Glasses in the Telescope

enables you to read Target at a distance of over 400 yards, therefore the problem of a FARM LEVEL with TELESCOPE at moderate cost has at last been solved. Voluntary letters from every State in the Union show the complete satisfaction it gives for all kinds of DRAINAGE WORK, IRRIGATION, DITCHING, TERRACING and every sort of farm work requiring a Level. GUARANTEED to be absolutely SIMPLE, ACCURATE, DURABLE and dependable in every respect.

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Coast Agents
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Write for Booklet

Complete outfit with full instructions shipped anywhere C. O. D $15.00 and express charges Subject to Examination.

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J. H. Masters, Mgr.
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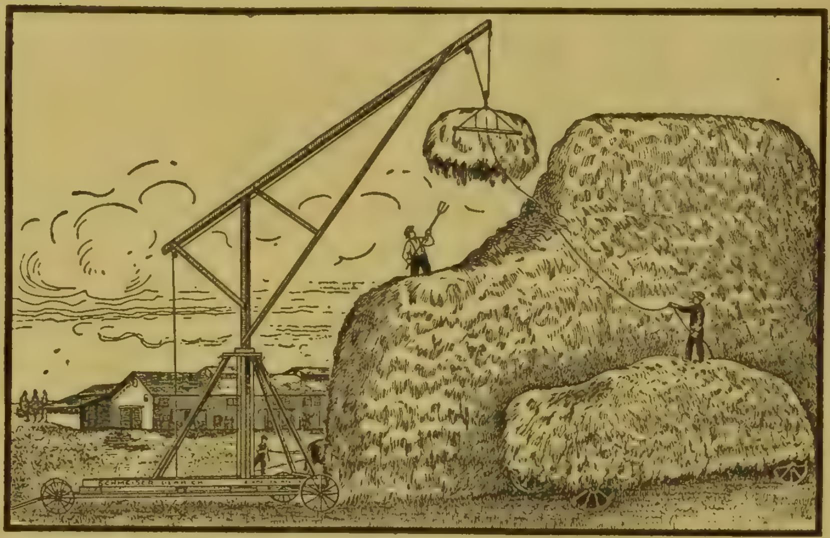
Stack it in the field, and later haul it from the stack to the barn.
The **Derrick** will load it from the stack to the wagons.



This Derrick Solves the Labor Problem

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Vertical Water
Balanced Pump

This Pump
Will Interest the Irrigator

Pump has Water Sealed Gland, Enclosed Balanced Impellor. Will not cut out by sand. Can be placed in a smaller pit than any other pump. Our Bulletin, C12, tells all about it. We have a permanent branch house at

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The pump can be seen in operation at our place of business

149 Beale St. San Francisco, Cal.

MELON SEED We have taken great care in procuring the best grades of Melon Seeds. The principal varieties we have grown under our personal supervision.

Water Melons—We offer the leading varieties of tested merit. We especially recommend our Black Seeded Chilean at $1.25 per pound and the Pasadena at $2.00 per pound.

Musk Melon—We have the Model at $2.50 a pound and Gautier's Pineapple at $1.25 a pound. These are both of proven qualities, being the best varieties for market purposes. Try some of our Red Rover at 15c an ounce, $2.00 per pound.

EUCALYPTUS Get our prices on Trees and your requirements of seed for next season.
We have a fine stock of trees—all leading varieties.

Send for Our Catalogue

MORRIS & SNOW SEED CO. 425 So. Main Street
Los Angeles, Cal.

Wholesale 360 Acres Retail

Smyrna Park Nurseries

Ceres, California

A complete line of Nursery Stock. Special prices on Peach, Plum and Apricots. It will pay you to let us figure with you before placing your order for Spring planting. All stock guaranteed true to name.

Smyrna Park Nurseries

Campin & Moffet, Prop's.

after sunrise and if the air is clear and dry, a rise at the rate of 3 degrees an hour until 8 o'clock.

Essentials.

The general campaign of frost fighting as thus far developed in California and adopted in other state of the Union with suitable modifications, covers three main lines:

1. Accurate advance information of the likelihood of frost.
2. Application of preventive means during critical hours.
3. Guarding the fruit after the low temperatures are passed.

Under the first head the fruit grower has now little more to do than keep in touch with the nearest forecaster. He may if he so desires study for himself typical frost maps for his locality.

As pointed out by the writer many years ago in the Bulletin upon "Frost Fighting" issued by the Weather Bureau, frost is largely a matter of air drainage. Frosts are found to occur as a result of certain movements of low and high pressure areas over the Pacfiic slope. There is a displacement of the lower air incident to such changes, both on a large scale and on a small scale; and I would suggest that the orange growers of San Gabriel Valley study the movement of the air in that valley, and that each grower determine for himself and to his own satisfaction the drainage of the lower air in his locality. The condition to be anticipated for injurious frosts is one in which the lower air strata will be camparatively still, the air dust free and pure and the humidity low; i. e., very little water vapor present and the subsequent rapid radiation from soil and plant. The grower can, I believe, after a little experience with the new Saturation-Deficit instrument determine the amount of water vapor present in grams per thousand cubic feet of space and thus estimate the probable effect of this factor in retarding the fall in temperature. For many years we have held that the likelihood of frosts could be determined in advance by observations of the dew points in the early evening. Recent experiments, however, by officials of the Weather Bureau and others have shown that this cannot be relied upon.

Conditions Vary.

It may, however, be pointed out that conditions in other localities may be so entirely different from the climatic conditions of this valley that conclusions reached elsewhere may not be applicable here. In a recent work on Meteorology Professor Cox of the Chicago Weather Bureau office is quoted as believing that the temperature of the soil is a most important factor in the control of night air temperature in the bogs; and that for example, frosts occur in bogs in May and even in June under atmospheric conditions that would not produce frosts in the midsummer months, due to the fact that the soil is much colder in the spring and early summer, than in midsummer. However, it seems to us that the problem is one chiefly of air drainage; and that the individual fruit grower of California will find that where there is little air motion, or in other words, poor ventilation, frost conditions are most marked.

A Difficult Problem.

Air is a poor conductor of heat and there is not much warming of fruit by direct conduction of heat through the air from some distant heat source. This explains in part why fires are not as effective in orchards as might be expected at first glance. In a paper read before the Fruit Growers' Convention at Watsonville attention was called to the experience of one of our best fruit growers who during the night of December 20-21, 1908, burned about fifteen cords of wood and forty tons of wet hay in an unsuccessful effort to protect the orchard. For thirty-six hours the temperature did not rise above 28° F. and for fourteen hours ranged between 19° and 24° F. It was noted that there was little air movement and the smoke rose "as straight as a pine tree."

Small or Large Fires.

Plainly in such cases as the one just quoted a large amount of heat is lost. Numerous small fires or heaters are much more effective than a few large fires; but none the less it is evident that there yet remains to be patented the ideal heater, one that will not only give heat in sufficient quantity; but one that is in some way combined with a fan, or blower, so that the air will be thoroughly mixed. In plain English, the problem is to convey the warmed air from the heater to the tree tops. It is only necessary to do this for a few hours whereas many hours of firing or heating will not suffice if the heat is carried away by some ascensional current. It is I think something of a mistake to keep the various devices known as coal baskets, oil pots, orchard heaters, etc., on the ground. To get the highest efficiency these should be placed nearer the fruit and provided with larger radiating surfaces than those now in use.

General Principles.

Regarding the various devices now on the market, opinions will differ concerning the relative efficiency of each and without doubt some will do better in certain localities than others. The three great principles underlying the construction of all present devices are:

1. Heating.
2. Covering.
3. Ventilating.

Under the first are included all forms of fire baskets, oil pots, orchard heaters, etc. Under the second head are cloth covers, lattice work, artificial cloud building smudge makers and the new anti-frost cover. Under the third head would come blowers, wind mills and air mixers.

Coal.

The first use of coal in baskets for the specific purpose of protecting orchards was by Edward Copely of Riverside, California, about 1896.

Oil.

The first use of oil, that I know of, was by Everett at Arlington, Cal

Hot Water.

The first use of hot water was b Meacham of Riverside.

Steam.

The first use of steam pipe through an orchard was by Wrigh Brothers of Riverside.

General Application.

One of the earliest applications of modern protective methods on a larg scale was at Santa Paula, by Mr. E W. Blanchard. Indeed the work of the Riverside Horticultural Club from 1895 to 1898 may be said mark the beginning of our work in frost protection. Many experiments were made by such men as Reed, Holmes, Hall, Koethen and other orange growers of Southern California. The work has gone on and we have seen many improvements since; but it is none the less a pleasure to recall the efforts of these early workers.

Covering the Orchard.

Under the second head, namely, covering, the purpose is of course to save heat. We utilize wherever possible any natural source of heat. Naturally this must be in the long run the most economical method of protecting. The earth's heat is conserved by entrapping it. Any cover spread above the ground interferes with loss by radiation. To be thoroughly effective the cover should be spread before sunset, or in other words, before the earth has lost much of its heat. Covering is probably the most effective of all methods. The chief objection, however, is the expense of covering large areas. The cover or shield, has a great advantage in this, that it serves after sunrise as a guard against the too rapid warming of the chilled plant. We have examined many orchards in California and find that fruit is most frequently injured where exposed to the direct rays of the sun. Some rough experiments made by the writer on frosty mornings showed a rapid warming of the side of the orange facing the southeast. While this may not be the true cause of injury it is a reasonable assumption that the cell tissue is subjected to unusual strain under such conditions. Another important consideration is that of the water content of the fruit. In California the most dangerous frosts are as a rule preceded by ten or more hours of boisterous north winds, quieting down at nightfall. These winds rob vegetation of much of its natural moisture and also dry the surface soil to a marked degree. The specific heat of both soil and plant are lowered, the loss of heat by radiation is greater, and in other ways the action is an unfavorable one. The point I would make in this connection is that both tree and fruit are not in their normal condition at such a time, and are less able to withstand the temperature change.

Under the third head, ventilation, there are no special devices at present available for mixing or stirring the air. When Nature mixes the air, that is on windy nights, frosts do not occur.

Yet to Come.

Finally, in our opinion the ideal frost protector is yet to be made. It ought to be a combination of cover, heater and ventilator.

As an aid to more definite information, Mr. McAdie suggests that cards similar to the following be filled out and sent the Weather Bureau office.

Fruit.	Injured if temperature falls to—		Injured if temperature is 32° F. or below. Hours.	Injured if temperature rises from 26° F. to 36° F. in— Hours.
	Ripe. Degrees.	Half-ripe. Degrees.		
Oranges:				
Navel				
Seedling				
Late Valencia				
Lemon				
Pomelo				
Mandarin				
Tangerine				
Kumquat				

Frost Warnings

By A. B. Wollaber, Forecaster, U. S. Weather Bureau, Los Angeles.

IT IS a true saying that over-confidence often leads to carelessness, and this seems, unfortunately, to be only too true as regards the protection of our citrus groves against injurious conditions arising from low temperatures. While concerted action is taken among horticulturists to guard against the ravages of insect pests, there is no general or widespread co-operation among the growers when it comes to frost protection. Though it is true that many individual growers still use protective measures during cold weather, the fact remains that frost protective measures have largely fallen into disuse during the last few years, principally due to this over-confidence. This appears to be the history of every cycle of warm years. The ranchers make ready for smudging after they have been frozen two or three times, and neglect the necessary precautions when there has been immunity from frost for a similar period. They become like the man who boasted that when he lived through the month of March he always lived through the year, but lost out the next year by dying in February.

With the experience of the last two winters fresh in our minds, some effort ought to be made to revive interest in the possibilities of frost protection, especially with a view of securing a more thorough co-operation among the growers in this important work, and it seems not out of place at this time to bring up the matter of frost protection by inviting attention to the methods employed by the Weather Bureau in the dissemination of frost warnings in this section, and acquainting those not familiar with the work as to how these warnings are made and how they can be obtained.

Several factors are involved in the problem of protection from frost, and for the grower probably the most immediately important of these is the issuance of adequate frost warnings, and it is this particular phase of the question with which we have chiefly to deal in this article. We know that there are certain physical changes constanly taking place in the atmosphere, each change being in turn the effect of a previous change and the cause of a subsequent change. Furthermore these changes are susceptible of record by certain delicate instruments specially designed for this purpose. The Weather Bureau keeps a large force of employes constantly on duty watching the action of these instruments and noting the changes that occur in the weather from time to time as indicated by them. At certain designated hours the information thus obtained is sent to all regular Weather Bureau stations by telegraph, and from this information impending weather changes are foretold. Whenever the conditions warrant, these forecasts contain special warnings of high winds, cold waves and frost. In the matter of dissemination of frost warnings the telephone and telegraph are extensively used, while a great number of persons are furnished with the information by cards and maps sent through the mails. The regular forecast card contains the information that frost is expected in the locality covered by the forecast, on the following morning, and this card is usually ready for mailing shortly after eight o'clock in the morning. In addition to these cards a special forecast is sent to certain

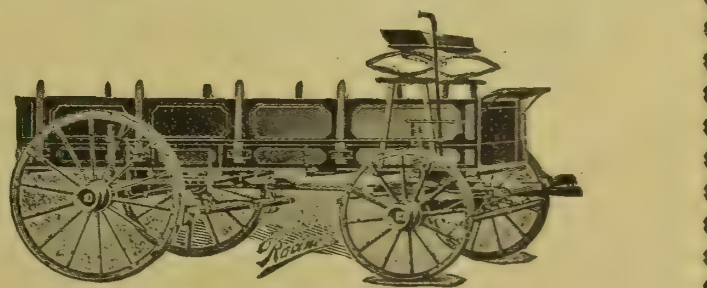
Here They Are.

The newest styles from the country's leading factories. Good, or they wouldn't be here; low priced, or we wouldn't be telling you about them. Just think of the kind of vehicle you want and depend upon finding it here. Whether you buy or not your time will be well spent here. We make it part of our business to treat visitors right.

ARNOTT & CO. (Inc.)
112-118 So. Los Angeles St.
LOS ANGELES

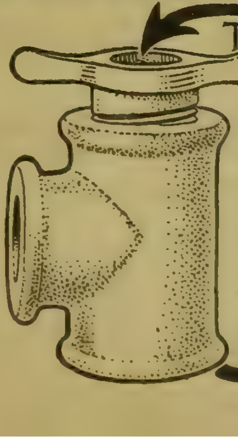
Write for 78-page No. 12 Catalogue, just issued. Sent free on request. This shows the new solid panel bodies used exclusively on our vehicles.

RACINE WAGONS



The manufacturers of the
Genuine Racine Wagons
have been making the ***best wagons*** on the market for 68 years. Absolutely guaranteed to be of the best ***air seasoned*** material. That is what counts in this climate. ***All sizes always in stock.*** Our prices are right. We pay the freight. Liberal terms and credit. Write us.

Wood & Company
Inc.
127 South Los Angeles St. Los Angeles, Cal.
We succeed the Southwest Supply Co. The same firm with a new name.



THE Tee Irrigating Valve

Simple in design and construction, costs less and will last longer than any other on the market.
The Tee Irrigating Valve is made of an ordinary malleable iron T with a brass plug. It is designed for those who want an inexpensive irrigating valve, especially where such valves are needed in large quantities. There is nothing to get out of order. It is so simple you will wonder why it was never thought of before.
A ½-inch valve sent post paid upon receipt of 40 cents. Quantity price, circular and full information upon request.
Address **George C. Roeding, Fresno, California**

districts. This is a short talk with the grower, so to speak, and in addition to the bare information that frost is expected, a forecast is made as to what degree of cold is probable. The following is a sample of one of these special forecast cards:

"Los Angeles Cal., Date,--------

"The pressure and temperature distribution over the Pacific Slope this morning indicate colder weather and heavy frost over the citrus belt Tuesday morning. The temperature in most sections will range between 26 degrees and 30 degrees according to location. Fruit growers are advised to watch carefully local conditions and be prepared to smudge or fire early."

These cards are ready for the first mail leaving Los Angeles for the fruit belt.

There is probably no part of the country more liable to sudden and marked changes in the weather than California. Our proximity to the Pacific makes it difficult for the forecaster to accurately judge the extent and future movements of the pressure elements affecting the weather in this section, and for that reason unforeseen changes often occur in both weather and temperature at certain periods in the winter season when the citrus fruit is in a critical state. In order to be prepared for these sudden changes arrangements have been made by which the local office is in constant communication with the several fruit exchanges scattered over the fruit belt, and in a comparatively short time a special frost warning can be sent to all these exchanges by day or night, and the managers will see that all interested receive the warning. The telephone companies also co-operate with the Bureau in the free distribution of all warnings, and any grower can receive the forecast by calling up his local exchange any time after nine a.m.

It will be readily seen by the foregoing that the territory is pretty well covered so far as the distribution of the frost warnings of the Weather Bureau is concerned. Professor Willis L. Moore, Chief of the Weather Bureau, has been exceptionally generous in his allowance for expenditures in extending and improving the service in this section, and there is no reason why every grower who needs the information and is in a position to make intelligent use of it, should not have ample warning of the approach of damaging temperature conditions.

In conclusion let me say that the Weather Bureau makes no charge for this information, and the special warnings will be sent to all growers making application for them. See that your name is on the mailing list of one of our Weather Bureau offices. When you are in a city where a Weather Bureau office is maintained, spare a few moments, visit the office and become acquainted with the officials. Tell them the needs of your community, and by an interchange of ideas a great deal of good may be accomplished.

Dairymen near Ferndale are short on milkers.

The Weather Man

THERE are many jokes at the expense of the weather man. Being human, he sometimes makes mistakes. Being fickle, the weather sometimes makes mistakes and violates all rules and precedents. When these mistakes—of the weather—occur at a time when the world is watching, as on last inauguration day, a cry on the part of a few goes up that the service is worthless. But we believe appreciation of the Weather Bureau's work on part of most fruit growers is such that nearly any other feature of the Department of Agriculture would be dispensed with before that of the Weather Bureau. The work of this particular service has secured such a name with scientists of the world that many other nations have sent of their ablest men to study it.

This Bureau is under the direction of Willis L. Moore, chief, with an army of observers and assistants at the service of farmer, ship owner or any who may be served. There are 2334 distributing stations from which are sent out information to over 3,690,220 addresses by mail, rural delivery, phone, telegraph and special railway service.

There are nine stations in this state, located at Eureka, Red Bluff, Sacramento, San Francisco, Fresno, Independence, Los Angeles and San Diego. Besides these are sub-stations and others like the station studying evaporation at the shore of Salton Sea.

The Los Angeles station has been of inestimable value to the citrus growers of that end of the state. Its service has been made more complete and available by the Exchange organization with its connection with members through the extensive telephone system. Within a few minutes from the time the weather office warns the Central Exchange, every citrus section knows of the impending danger and is prepared to fight.

The Los Angeles office is in charge of Mr. A. B. Wollaber, one of the me who extends a welcome to every inquirer who visits his weather shop in the Central Building, corner of Main and Sixth Streets.

The layman can only look wonderingly at the confusion of clicking instruments, thermometers, guages, etc., but the perfect organization may be at least admired. Electric wires connect various recording instruments with the thermometers, barometers, and guages on the roof. The records of these instruments are wired to Washington and to other stations daily.

In an adjoining room a complete though small print shop is equipped for rapidly printing and mailing weather maps and reports of weather conditions. At Pasadena, San Bernardino, Redlands, Riverside and other points are sub-stations.

This service is absolutely free all who wish it and it is the fru grower's fault if he is not securin advantage of it.

Alexander McAdie is in charge o San Francisco and its many sub-stations and his work in behalf of frui growers has wide appreciation.

This issue contains articles by both Mr. McAdie and Mr. Wollaber.

DANGER POINT.

The Missouri Board of Agricultur has figured out the following dange point for peaches. When the temperature drops to those points the pots should be lighted:

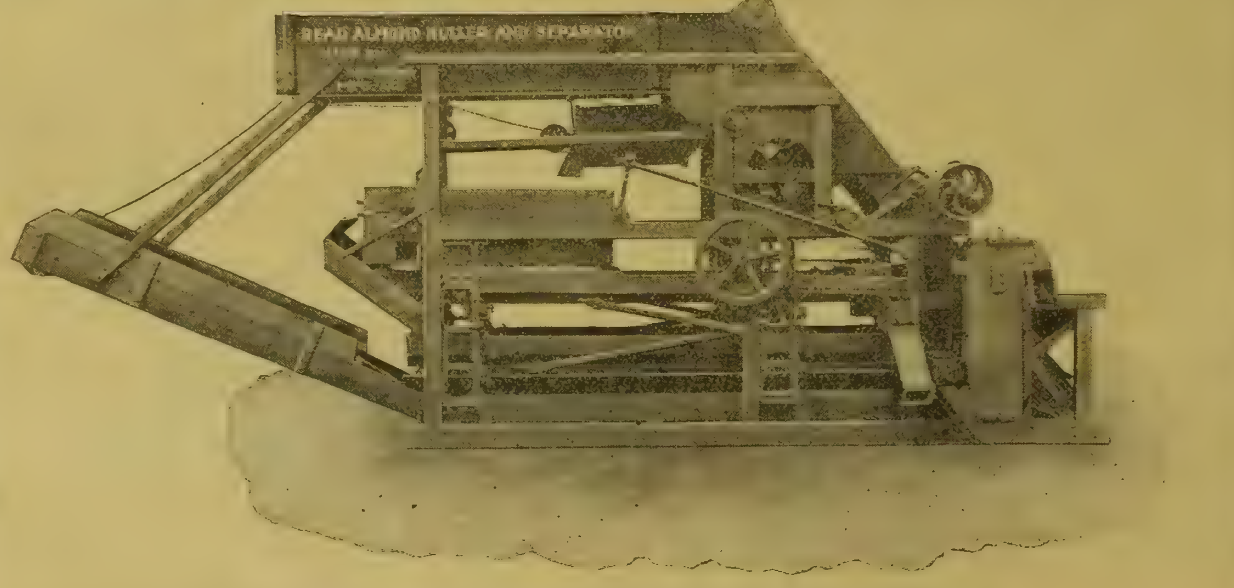
Buds appreciably swollen; zero Buds showing pink, 15 above zero Buds almost open, 25 above zero Flowers newly opened, 26 above zer Petals beginning to fall, 28 abov zero. Petals off, 30 above zer Shucks (calyx tubes) beginning t fall off the young peaches, 32 degree is the danger point.

The same rule will apply for apple This frost fighting is actually bein done in large areas and in a practic way. Drainage gives man dominio over the soil, irrigation permits hi to command the rain and the oil coal pots let him defy Jack Frost.—Rural New Yorker.

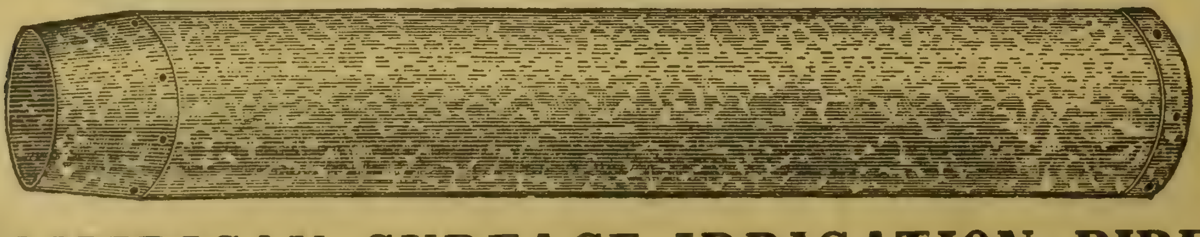
Ventura is proceeding in the buil ing of its good roads. There is som contention because of failure to pr vide a road to meet the newly co structed road in Los Angeles count which passes through a tunnel in t mountains near Newhall.

Porterville is after a cannery a other fruit processing concerns.

The Read Sure Pop Almond Huller and Separator



For further information, prices and terms, address the
Schmeiser Manufacturing Co. - Davis, Cal.



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SAVES WATER, GRADING AND TIME
The only scientifically constructed *Surface Irrigation Pipe* on the market. No round seams to leak, retard the flow of the water, or weaken the pipe. Cheaper than flumes. Easily handled. *Will last a lifetime. The correct way to irrigate alfalfa.* We make Riveted Water Pipe and Tanks. *Write for illustrated catalogue.*
AMERICAN STEEL PIPE & TANK COMPANY
349 Pacific Electric Building Los Angeles, California

The Frost Problem

IT WOULD SEEM needless at this time to urge upon the orchardists of Southern California the necessity of adequate protection against frost. Speculation as to the future aside, it is a stern admitted fact that "Jack Frost" created havoc in the orchards last year, and but one question now presents itself to the grower of citrus fruits, namely, "How can the crop be saved?"

A year or more ago the writer, in the columns of this paper, urged upon the orchardists the need of "Frost Insurance," and presented the subject with some detail as to cost. All that was then said might now be repeated, but meantime the situation has become more serious than most of us care to admit, and, call it what you will, something must be done by those whose orchards are within the limits of the danger areas, if marketable fruit is to be harvested. It is almost amusing to hear the owner of a little orchard argue with convincing clearness (?) that frost cannot visit his ten acres, and, the while, admitting disastrous ravages in neighboring orchards, with only an unseen dividing line between. Until last winter one might almost have been pursuaded that the keeper of low temperatures had his favorites in Southern California, and possibly his enemies, but it is no guess work to say that the "frostless belts" have, within the past year, shrunk to proportions much more easily measured than in former years.

The writer has no desire to push this view of the subject any farther than may serve the purpose of opposing what too often seems a false and dangerous feeling of security. The experiences of the past season ought to carry with them the lesson that frost in Southern California is a very cold fact to be dealt with, and not a theory for speculation.

THE QUESTION OF COST.

Two views of this matter may be had, namely, initial cost, which includes the cost of a necessary equipment of stoves, and average annual cost, for a series of years. Putting it briefly, the writer estimates the cost of stoves at from $12.00 to $15.00 per acre (including freight), according to distance for shipment, and number of stoves per acre, and the average annual cost, for stoves and fuel, at not to exceed $10.00 per acre for adequate protection. In arriving at this result no account is taken of labor in the orchard, which cannot well be estimated, and it is assumed that some years the cost will be more, and others less, and some nothing. An average of three burnings a year is also assumed, and 25 or 30 stoves to the acre. But many orchardists who should have frost protection balk at the cost of equipping with stoves. It is unfortunate that some other and less expensive, and, at the same time, effective device has not been produced, but, numerous claims to the contrary, it remains a fact that the stove and oil-soaked shavings is at once the best and cheapest means of saving fruit and trees from damage by frost. All other methods either fail to do the work satisfactorily, or cost more for both materials and labor in using. To illustrate: The oil pot method using 100 pots to the acre, requires 100 gallons of oil for a single burning. The same quantity of oil, with shavings added, will make fuel enough to protect four acres for the same length of time.

GET READY IN TIME.

"Time by the forelock" should be the watchword of the orchardist this year. He who waits till frost comes, just to see whether it will come or not, is going to be too late when it does come. Nor is it safe to gamble on its not coming. With a valuable crop on the trees, too much is at stake, and here is a form of insurance where, unlike life insurance, one does not have to die to beat the company. The cost is moderate and protection is sure to the man who will rightly use the means to be had. In this connection it must be admitted that no equipment, whatever its form or cost, will protect unless it be faithfully and intelligently used. When the thermometer registers around thirty degrees it is time for someone to get busy, and keep busy till all danger is past. An extra supply of fuel should always be on hand, and it is better to burn more than is required than not enough. But the one urgent need is to be ready when the danger hour arrives. To this end orchardists are urged to supply themselves with stoves and fuel months in advance of expected need. Car-load shipments mean less freight, and if near neighbors join in ordering, shipments can always be made in car lots—at $1.75 per ton (for fuel) from Los Angeles to points east as far as Riverside and Redlands, South into San Diego county and North well into Ventura county.

CORRESPONDENCE AND SUGGESTIONS INVITED.

The Occidental Fuel Company, with offices at No. 201 Douglas Building, Los Angeles, has been endeavoring for several years to meet the demands of Southern California for frost protection, and has always welcomed, as it now does, correspondence and suggestions from orchardists. This company now offers its improved and simplified stove at a reduced price, and in future will beneficiate its fuel by the addition thereto of about twenty per cent of fruit pits, which adds greatly to the heat-producing quality of the fuel, and makes it burn longer. This improvement in the fuel will be appreciated especially by those who know that heat is of greater value than smoke in battling with frost. The price of the fuel will remain the same as heretofore. An experience of three years has demonstrated that it can not be sold for less. With crude materials at hand, and therefore the cheapest to be had; with an extensive plant for manufacturing, and with the most economical management, this company has been able to realize only very moderate profits.

The foregoing statement is made to set right those who have thought its prices too high.

All inquiries, either by letter or phone, will receive prompt attention, and again the necessity for early orders is urged upon all who desire to equip for protection against frost. Remember, "time by the fetlock" is bad business if you have a crop to save.

OCCIDENTAL FUEL CO.,
201 Douglas Building,
Los Angeles, California.
Home Phone A 5125

No Hoof, No Horse

U. S. statistics show that 80 per cent of all horses are lame and that 80 per cent of the lameness is caused by hard and contracted feet. As a hoof softener, toughener, nourisher and grower there is nothing equal to

Eshelman's Wool Fat Hoof Healer

A horse's hoof is from 60 to 70 per cent water. Grease and water will not mix. There is no grease about Wool Fat. It mixes readily with water, is very penetrating, and while a great medicine of itself, it also acts as a vehicle to carry to the afflicted parts the other medicinal properties of the HEALER. It is absorbed into the skin and gives natural stimulation and nourishment to the hoof. There is nothing that can compare with it for this purpose, nor as a remedy for contracted hoofs, split hoofs, quarter cracks, mud fever, corns, grease heels, and for all kinds of sores and cuts anywhere on any stock. If you have tried it, you know that this is true. If you have never tried it, it will surprise you with its power as a healer and restorer. It is not a new remedy, but has been on the market in the East for many years, where it has given the greatest satisfaction.

4 oz. package, 25c; 12 oz., 50c; 32 oz., $1.00; 5 lb. pail, $2.00; 10 lb. pail, $3.50. It is easy of application. Directions with each package.

TRIAL OFFER.

We will send you a 2-lb. can, use it 15 days, and if satisfactory, send us $1.00. If not, write us to that effect, and you need pay nothing. We take all the risk, you just try it. Send for it today.

West Coast Mfg. Co.
. 111 Winston St., Los Angeles, Cal.

CRIMSON WINTER RHUBARB

$1.50 per Dozen
$6.00 per 100
$40.00 per 1000

Now is best time to plant Rhubarb.

Berry Plants of All Kinds.

J. B. Wagner
Pasadena Cal.

Rhubarb and berry specialist

Plows

Don't you need a new plow? Now is the time to buy. When you are considering the matter, remember that a name does not sell poor plows, but good plows have made one name famous.

The name "DEERE" on a plow fixes the quality and has done so for half a century.

Backed by 70 years of experience, the John Deere plows are the best that brains and skill can produce—the most satisfactory to the user in every way—more of them sold than of any other three makes.

The John Deere plow is the lightest draft plow in the world. Save your horses by buying Deere plows.

Made in every style—from small walking plows to the big engine gangs.

Get ready for your plowing now. Write for catalogue today.

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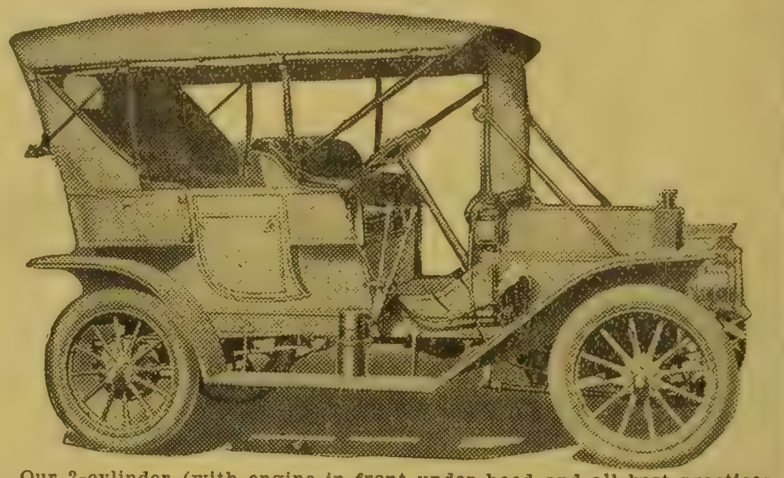

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Fighting Frost in Colorado

THE late spring frosts of 1907 caused the loss of the larger part of the crop of the Rocky Mountain region. This set the growers to thinking along the line of protection from frost injury in the orchard. The old-time theory of making a cloud of smoke over the orchard to prevent radiation was experimented with in many of the orchards during the following summer. This practice soon gave place to an effort to actually warm the air of the orchard by the use of small fires. The following years, 1908 and 1909, brought late frosts again that in some sections did much damage. Peaches suffered most both years. There is no doubt that many orchards of both peach and apple in Colorado were saved, or at least made larger crops both these years by the use of heat in the orchards. A great deal has been said, and many extravagant statements made in regard to this work of orchard heating. The Colorado Experiment Station has made some experiments and collected what data was possible concerning this work. The practice of heating has not been carried on long enough and the different methods experimented with enough so that we can determine all the details for the most efficient system.

The first thing tried was the burning of trimmings and other rubbish in piles in the orchard. This method was entirely too uncertain to be reliable for, though Colorado has the reputation of being always sunny, a late spring frost is very apt to be preceded by a storm that makes the brush too wet to burn. Making fires at given intervals on the ground also had its drawbacks, owing to their not being easily controlled. The next step was the heat or so-called "smudge pot." It was soon demonstrated that fuel, as coal or oil, confined in an iron receptacle could be better controlled and made more efficient and reliable. Much difference of opinion still exists as to details in form and size of these receptacles. There are many companies in Colorado making these pots.

An investigation of this problem was started on the west slope in the Grand and Uncompahgre valleys, and on the east slope at Canon City at about the same time. At Canon City a committee was appointed by the chamber of commerce that made experiments during the summer. The facts brought out then were used the two following springs with success. Of the various methods tried there the oil pot seemed to have become the most popular. The pot consists of a simple sheet-iron can holding from four to eight quarts. From 50 to 150 of these were used per acre. Some difference of opinion exists among the growers as to the number per acre. About 100 per acre is the number that has been most used, but many growers think that 150 should be used to insure success. It is probable that a great deal depends on the number of degrees of heat that are required to keep the orchard above freezing point, and also the condition of the blooms at time used. The fruit seems to have least resistance to cold when the trees are in full bloom. Where 100 pots per acre were kept continuously burning during the night the temperature was raised from 2 degrees above zero to above freezing point.

At Delta and Grand Junction, where letters were sent out asking for the results of their work, it was found that out of 40 answers the average number of pots used per acre was 6 for oil and 59 for coal. The average rise in temperature was 7.5 degrees F for the oil heaters and 6.5 degrees for the coal heaters. Most of the times when the heaters have been used in Colorado in the past two years the wind was blowing. The same degree of success could not be expected in those cases as when no currents of air prevailed. That some of the growers did succeed under those adverse conditions is an undisputed fact, for in several instances the crop was saved when neighboring orchards similarly situated had practically a total loss of crop.

The cost of preventing frost injury in this way is hard to estimate. It is necessary to have not only the required number of pots on the ground when the frost comes, but sufficient fuel, either coal or oil, must be immediately available for use. Less help is necessary where the oil is used, as the oil is more easily and quickly fired, and if refilling is necessary it is more easily done. Capt. B. F. Rockafellow of Canon City, for 35-acre orchard paid $1,035 for equipment, which consisted of 3,500 pots and a steel tank for storing the oil.

A considerable difference of opinion prevails as to when heating is necessary. Heat was applied from two to four times in many orchards last spring and a full crop obtained. Some orchards nearby these were not heated at all yet secured a crop. It is quite probable, however, that at least some of these negligent growers reaped the benefit of the work of their more careful neighbors. The feeling among many of the better growers is that it is safer to heat once in a while when it proves to be unnecessary than fail to heat when the crop will be lost without it. Consequently, we may sum up by assuming that orchard heating is a matter of insurance, much the same as spraying potatoes in the East for blight.

As yet we have no means of knowing just what temperature will produce injury to the fruit. Probably much depends upon the amount of moisture in the air, the rapidity of the fall in temperature and the corresponding rise after the freeze, as well as the condition of the buds, blossoms, or small fruits, at the time of frost. Some time when agriculture becomes an exact science we may be able to determine beforehand just how many chances we may safely take. As it stands now, the orchardist feels that he can spend some money and a few anxious nights each spring in order to be more certain of securing a crop that frequently means from one hundred to one thousand dollars per acre.—E. R. Bennett, Colorado Agricultural College.

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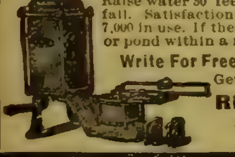

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THE TOMATO AS A FOOD.

THE tomato, which is in general use as an article of food, is the fruit of a number of varieties of a plant known to scientists as the Lycopersicum Esculentum. Then there are also the varieties known as currants and cherry tomatoes. The fruit of the first of these grows in tiny clusters and the plant itself is small and only raised for ornamental purposes. Cherry tomatoes in size and appearance resemble the fruit from which they derive their name. They are occasionally grown for pickling and preserving purposes, but are rarities in the average kitchen.

The original home of the tomato was in Peru, the Brazils and other South American countries. Certain historical records still in existence show that Spanish adventurers visiting Peru took it from that country to Europe early in the sixteenth century. The nations on the northern shores of the Mediterranean seem to have favored it from the first. Britain and the Northern land, however, appear to have looked upon it with distrust and even dislike. Cultivation of the tomato for the market was not begun in Great Britain until 1800 and in America until 1830. Four varieties appear to have been grown, all of which were of the pink-fleshed type. They were popularly known as love apples or Jerusalem apples. The prejudices against them remained nevertheless and the belief that they would, if eaten, cause sickness and even death, seems to have been fixed in the minds of the multitude.

Botanists say that the old-time ideas about tomatoes being harmful probably arose from the fact that the plant belongs to the nightshade family. But outside of the poisonous qualities charged, a whole lot of silly superstitions have been saddled upon it by the weak and credulous. In America and in Britain as well, at the beginning of the last century, the tomato was declared to cause palsy, also colic in grow-ups and mumps in children. All this and other stupid notions concerning this beautiful and wholesome fruit have long since been exploded. Nevertheless one of such apparently remains, which is that the use of tomatoes causes cancer. As a single proof of the persistence of this evil ignorance may be cited the fact that within recent months a New York newspaper published a long article on tomatoes as a provocative of the dread disease in question.

An illustration of the absurdity of this mischievous belief is given by the Hon. W. Russell, the English medical authority and author, in his well-known work on "Diet and Its Relation to Disease." In the book he treats at length on cancer, gives statistics regarding it from localities all over the world, and appends a list of diets by which the disease may be prevented, checked or cured, and in the majority of these diets he gives a prominent place to tomatoes as a curative.

Tomatoes are universally recognized as an invalid food by medical men. This for the reason that their pulp and juice are not merely digestible, but contain an acid which is at once a mild aperient and a promoter of gastric secretions. Now cancer, according to Professor Russell and his colleagues, is a disease of impure blood, produced by an excessive use of meat, fish, alcohol or tea. These in turn interfere with the action of the assimilative and excretory organs, and the body becomes charged with poisonous matter, the outthrusting of which not infrequently takes the form of cancer. As the action of tomatoes on the body is of a purifying sort, for the reasons given, it follows that it must be anti-cancer instead of cancer-producing. Its beneficial ation on the stomach is recognized by the profession at large. The late Dr. Bull, of New York City, always used to order raw tomatoes for his patients when they reached the solid food stage of recovery, because of their blood purifying and intestinal regulating powers. At the general Memorial Hospital, New York City, better known as the Cancer Hospital, because the institution makes a specialty of treating cases of the disease, tomatoes in season constitute an important part of the diet of convalescent patients.

A semi-humorous eulogy of the tomato has been pronounced by Professor Charles Wickenham of Guy's Hospital, London, thus: "It makes superb soup either alone or with materials, it also makes ideal salads, catsups, pickles (green or ripe), sweet, spiced and sour, or in mangoes. The tomato is equally delectable if sliced, baked, escalloped, dried, fried or stewed. It is food for the sick and well, old and young; the rich and poor, the leisurely and the laboring, the wise and the otherwise, the saint and sinner. It is the best of all vegetables as an article of diet for the sick; especially if they suffer from stomach trouble, it is a gift from heaven."

Tomatoes are unquestionably more wholesome when eaten raw; they are one of the most popular articles for making salads. In fact, some are of the opinion that no salad is entirely complete without the tomato forming at least half of it. The green salad is one of the most healthful articles of diet, especially when eaten with a dressing similar to French dressing, simply using lemon juice as a substitute for vinegar. The best way to make this dressing is to squeeze and strain the juice of one lemon, then mix and dissolve salt to taste, after which add from two to four times as much olive oil as you have lemon juice and stir in thoroughly. Many prefer a small quantity of mustard with the dressing, and if this is desired, it can be added. Various combinations can be used with tomatoes to advantage; for instance, tomatoes and lettuce make a splendid salad; tomatoes and cabbage can also be recommended; tomatoes and watercress go well together; in fact, most any of the green vegetables ordinarily used for salads can be combined with tomatoes and the combination will in every instance have a splendid flavor. Many, however, prefer to use the tomato without the addition of other articles, and used in this manner it will make a splendid salad, especially when either mayonnaise or a dressing similar to the one just suggested is added.

The tomato might be termed an intestinal antiseptic; in other words, it has a cleansing effect upon the entire alimentary canal.—The Fruit Magazine.

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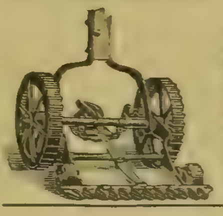

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Crop Conditions.

Crop conditions the country over are recorded by the Crop Reporting Board to be 5.5 per cent lower than on July 1, 1909, and 3.4 per cent lower than the ten-year average. We note that corn shows a general condition represented by 85.4 as compared with 85.3 last year and 85.1 for the ten-year average. Winter wheat is practically the same as last year and the ten-year average. The condition of barley is materially off, being 73.7 as against 90.2 last year and 88.1 ten-year average. All kinds of hays the country over show 80.2 as against 82.8 last year. Kaffir corn is 82.7 as against 89.4 last year. Grapes are 80.2 as against 90.2 last year or 88.5 ten-year average. Lemons and oranges are both reported shy, oranges showing 82.6 as against 88.6 ten-year average, and lemons 88.6 as against 91.4 ten-year average. Lima beans show 87.7 as against 89.1 last year. Hops look good, showing 89.6 as against 86.6 ten-year average. Sugar beets show 89.3 which is 1.3 better than the ten-year average. Cotton is also good, showing a condition this year of 80.7 as compared with 74.6 last year and 79.5 for the ten-year average.

According to Crop Reporting Board California has the greatest acreage of barley of any state in the Union. This acreage this year was 1,298,000 which, as compared with the acreage of last year, is 110 per cent. Minnesota, which is the second state this year, had 1,285,000 acres or four per cent less than her acreage last year. South Dakota comes third with 1,021,000 acres. Other states have smaller amounts, the total for the country being 7,057,000 acres.

Warming Outdoors.

We trust our readers who are not specially interested in frost protection will pardon us for the amount of space given over to that subject this week. These articles will have interest for many engaged in production of citrus fruits and also for some growers of deciduous fruits and grapes.

This matter of warming all outdoors has been discussed for many years and by some declared to be impracticable, but lemon growers who made a small fortune by giving a little attention to building fires in their orchards last December and January, are firmly convinced that their small investment brought immense gains, and they will continue preparing for the unwelcome Jack Frost.

It is yet several weeks before the citrus people will need to be ready for the fight and a still longer time before deciduous growers will need to think of preparation, but it is a feature of fruit growing which requires forethought. Those who are producing crops which may be affected by cold weather should not neglect to prepare.

The apple growers of Colorado have saved millions by preparedness. The apple growers of Washington and Oregon likewise are taking up the study of means and finding benefit from the work done. Vineyardists of California are also making profitable use of frost protection. These growers, however, have a different problem to face at a different time of the year from the citrus grower. Damage to deciduous crops is usually at blossoming time or very soon after, while the citrus grower must save his nearly matured fruit in December and January, but the same general principles prevail, and we trust this issue will be of interest to the deciduous as well as to the citrus orchardist.

Co-operate.

Fruit growers realize that one of the hardest features in fruit marketing is securing of cooperation on the part of their neighbors. Probably a still harder proposition will be to secure co-operation in fighting frost. Yet those who have observed efforts made toward frost protection assert it to be entirely successful, and to lessen expense frost fighting should be co-operative. The owner of one small tract of land may make an effort at protection and succeed in a very limited way in protecting his own orchard and others around it, but if all join the work is much simplified and made practically sure so far as frost conditions occurring in California are concerned. The one thing which prevents the preparation necessary for this frost protection is probably the gambling spirit born in most of us.

The cost of preparation for firing is not great, but at the same time if it is not necessary no fruit grower wishes to incur it. On the other hand where the saving amounts to dozens or perhaps hundreds of times the cost he should regard the "insurance" as cheap. If the weather does not demand use of materials on hand, there is little cost for distributing in the orchards. The supplies may be later stored until the next or succeeding years when they may be needed.

Breeders Magazine.

For six years the American Breeders Association has been discussing problems, the correct solution of which will lead to vastly improved conditions for the farming class of this country. "Practical breeders are beginning to understand that they need the work of scientists who study heredity and breeding; and the scientists have proven to themselves the wisdom of being in close touch with the breeders." The American Breeders Association has brought these classes together, and in the six annual meetings they have discussed these problems, and much material of value has been incorporated in their annual reports. The latest step of this organization is the publishing of a magazine. It is called the "American Breeders Magazine," and Volume 1 Number 1 is just received, though we note it bears date of "First Quarter, 1910." It aims to be the exponent of the newer and more scientific phases of the subject of breeding as applied to all plant and animal life. From its foreword written by James Wilson, we quote:

"Improvements by breeding are unlike those secured by adding new acres to the cultivated areas of the country, by deeper plowing, by more frequently cultivating the crop, by adding to the soil larger supplies of fertilizers, or by giving a more expensive ration to farm animals. These improvements, though they greatly increase the farmer's profits, are secured at a cost which sometimes equals the value of the added product. But the cost of improvements through breeding usually represents only a small fraction of the added values. The increase of product secured by breeding pays the cost in a short time, and, since there is no further expense, the annual increase afterward is clear profit. The farmer will be able to retain a part of the larger production in the form of added profit, and part will help to reduce the cost of living to those in our cities. Larger production on the farm will also give increased business for the transportation company, the manufacturer, and the merchant, and will provide the nation with a larger product with which to hold our balance of trade."

Frost Commission.

It may be noted in one of the articles on frost protection which appear in this week's issue, that a frost commission is suggested; this commission to be composed of representative citrus growers whose duties shall be to study questions of frost conditions and methods of work; still more to secure concerted action in the work against this menace to highest grade of fruit. It is generally conceded that the owner of the small orchard is up against an exceedingly hard proposition if he tries to warm up all outdoors by himself. The large orchardist or the orchardist in a community which will generally join in the work has a comparatively easy proposition, and a change of five or even ten degrees of temperature can be effected which will save his crop from any weather which has ever been given the citrus section. It is claimed that a ten degrees increase in temperature is easily secured over a large area. Therefore, the greatest problem which such a commission, if appointed, would have to meet, would be co-operative work in the orchards. Of course there are a thousand and one matters which would have to be considered, such as number of fires per acre, conditions of atmosphere, effects of air currents, best fuel, etc.

A Sucker a Minute.

A subscriber at Denair has sent us a number of circulars and pamphlets describing "lava fertilizers." The general price of the stuff is $20 per ton, though some grades range higher. The value is not stated, and we are unable to find any analysis given. But in any case, the effort does not seem to be so much to sell the product as to sell stock in the company. Unless fraud can be shown, that cannot, of course, be prevented, but when the sale of the "fertilizer" is taken up in this state, we imagine there will be something doing However, it probably never will be brought from New Jersey to California.

As to the purchasing of stock in such a concern, it does not seem as if the farmer would ever be caught, but the proverbial sucker a minute—and sometimes twins—affords ever new material for the promoters. We trust, however, that readers of the Cultivator will investigate carefully before investing.

Agricultural News Notes of the Pacific Coast

Northern California

Tehama county will ship about 200 cars of pears.

Penryn has shipped nearly fifty cars of standardized fruit.

Sacramento proposes to stop dredge mining on the American river.

Butte county finds it will have an exceptionally heavy peach crop.

Tehama county will vote on $175,000 bond issue for roads and bridges.

Many canneries bought apricots this season at $25 per ton orchard run.

Paradise Valley, Butte county, is planning for an apple fair to be held in November.

The first car of Gravensteins to be shipped from Sonoma county was from Healdsburg.

Warehouses at Arbuckle, Colusa county, are taxed to their fullest capacity with grain.

The board of supervisors of Siskiyou county allows a bounty of $2.50 on coyotes and $10.00 on panthers.

Some Thompson Seedless grapes near Yuba City have been injured by sunburning during the hot weather.

The Western Power Company will use 1000 carloads of cement in its concrete dam in the Feather river.

Meadow larks and doves have won many friends this year because of their inroads on the grasshopper pest.

The cannery at Yuba City, Sutter county, has arranged to handle 1600 tons of choice fruit. It will start this week.

Peach growers near Yuba City are selling to canners at $25 per ton, the canneries furnishing boxes and paying freight.

A large dairy company is negotiating for a lease of 1200 acres near Dixon, Solano county. It is proposed to install about 1000 cows.

Oiling of pools in Placer county to destroy malarial mosquitoes has resulted in killing some trout in streams into which the pools drain.

Warm weather has hastened the maturing of Yuba county's hop crop, and it is now estimated that picking will begin not far from August 12th.

The Sacramento Irrigation Company has filed on water in the upper Sacramento which it will use in irrigating the Antelope Valley, near Red Bluff.

The Anti-Debris Association is after various dredger companies near Oroville to prevent the depositing of debris in Honcut creek or the Feather river.

The Shasta County Poultry Keepers Association has been organized at Redding with C. W. Pawley of Millville, president, and S. C. Shadwell, Redding, secretary.

Orange growers of Butte county have requested the county supervisors to purchase a fumigating outfit for the horticultural commissioner for a campaign against yellow scale.

The state horticultural commission has served notice on the fruit growers of Placerville who have not joined in the standardizing movement, that infested fruit will not be allowed to leave the state.

Central California

The cannery at Turlock starts on peaches this week.

Hardwick, Kings county, claims to be some on producing corn.

San Benito county hay baling operations are practically finished.

The Grange at Turlock, Stanislaus county, is advertising for beans.

Canneries at Visalia, Tulare county, are in full operation on peaches.

The shortage of snow in the Sierra Nevada is giving scant water in the irrigating canals.

Fresno county is contemplating the bonding of the county for one million dollars for good roads.

The visit of the dairy inspector has caused a general cleaning of the dairy barns of Laton, Fresno county.

Porterville reports the output of oranges for the coming season to be from 60 to 75 per cent of normal.

The Visalia Agricultural Park Association is hustling its final arrangements for the fair to be held this fall.

Grasshoppers are still stripping trees and doing much damage in the neighborhood of Visalia, Tulare county.

The raisin advertising campaign conducted quite largely over the East has been successful in increasing the demand.

The directors of the Apple Carnival to be held in October at Watsonville are making an energetic campaign for a big show.

The first car of melons out of Turlock, Stanislaus county, was shipped July 6th, the growers receiving $12 to $15 per ton.

Turlock, Stanislaus county, reports great quantities of Russian thistle, and many are urging a concerted campaign against it.

A gardener has just purchased 200 acres of rich land near Porterville, Tulare county, and will go into gardening on a large scale.

The county live stock inspector of Kings county reports one case of glanders during the past month, no other contagious infectious diseases.

A company with a half a million capital has proposed to purchase 2300 acres of land near Corcoran, Kings county, and stock it with 1000 dairy cows.

The heirs of Chas. Lux have disposed of their interests in the great Miller & Lux estate, which owns much land in Central California, to Henry Miller.

There is much contention in the Modesto-Turlock Irrigation District over bonding the district for $1,000,000 for building reservoirs and enlarging the canals.

Suits between the Lakeside Ditch people in Kings county and the Tulare Irrigation Ditch Company, have been settled favorably to the interests of the irrigators.

The great sequoias in the Sierra Nevada in eastern Tulare and Fresno counties were threatened by forest fires last week, but an energetic fight on the part of a large force of men saved the field.

Southern California

Alligators are being discovered in the Salton Sea.

San Bernardino is working for an alfalfa meal mill.

Santa Maria is getting ready for a big farmers' institute August 3rd.

San Bernardino county hay balers report exceptionally good hay crop.

Redlands reports local apricot crop as 400 tons short of that of last year.

Oxnard sugar factory began its campaign on Ventura county beets on the 16th.

Orange county expects to produce about $600,000 worth of lima beans this season.

Almond growers of Antelope Valley have combined and purchased an almond huller.

Apricot driers at Orange report thieves carrying off their dried fruit in wholesale lots.

Imperial and Coachella Valleys have sent nearly 1600 cars of cantaloupes to the Eastern market.

The Farmers Union of Coachella Valley picknicked on the Fourth, entertaining all who came.

Colorado apple experts are looking into the apple possibilities of Yucaipe Valley, San Bernardino county.

The Warner Ranch in San Diego county reports feed better than usual and all stock in excellent condition.

Corona, Riverside county, reports its output of honey for this year will be less than one-fourth the normal crop.

Imperial Valley has secured the aid of nearly fifty young women expert table grape packers from Fresno for the season's run.

The sugar factories at Santa Ana and Los Alamitos are starting on the beets which will bring the farmers this year $1,250,000.

The work of constructing eight new cotton gins has been taken up in the Imperial Valley. They will be ready for operation by October 1st.

The apricot season is ended and a few lots of fruit have been sold, but most driers have refused offers which have been made up to this time.

A. V. Steubenrauch who succeeded G. Harold Powell in the orange and lemon decay investigations, will visit California and address citrus growers.

Orange county's bean crop prospects are not as bright as early in the season, and it is now estimated that the output will be 25 per cent short of last season.

The apricot pitting record is now claimed by a girl who worked in the dry-yard at El Modena, Orange county. Between 7 a.m. and 6 p.m. she pitted 1090 pounds and laid fruit neatly on trays.

The annual convention of the American Institute of Homeopathy which was held in Pasadena this year, passed a resolution touching upon the sulphuring of fruits "in favor of the farmer, fruit grower and preserving factories, and against the pernicious rulings of Dr. H. W. Wiley, Chief of the United States Bureau of Chemistry."

The Coast

Prineville, Oregon, began cutting its grain hay at the end of June.

Ritzville, Wash., reports great damage to all grain crops by the drouth.

Harvesting of wheat now on in western Montana shows lighter crops than anticipated.

The forest fire near Vancouver, B. C., covered many square miles and destroyed valuable forests.

Columbia county, Washington, has done more of its harvesting this year by combined harvesters than ever before.

More than 200,000 acres of land are now receiving supplies of water from the Roosevelt dam in Arizona.

Farmers in Northern Idaho report an increase of five bushels of grain per acre under the dry farming process.

The first hogs of the season were recently shipped from Nez Perce, Idaho, and brought to the farmer 9¼ cents.

A pear grower near North Yakima, Washington, has sold his crop on twelve acres for $5500, buyer to take all risks.

Farmers near Prineville, Oregon, mow one crop of grain hay and sow immediately another crop on same ground.

The Interstate Fair to be held at Spokane this fall will have, it is predicted, a great display of apples and other fruits.

Owing to lack of spring rains it is feared the grain output of the Inland Empire will fall 30 per cent short of that of last year.

The state grain inspector of Washington reports that the drouth has done great injury but not by any means destroyed the grain crop.

The Yuma Valley, Arizona, will harvest about 15,000 acres of alfalfa seed this year. The crop will prove very satisfactory in that section.

Peach orchards near Nelson, British Columbia, will show the heaviest crop ever this year. Nelson will ship 100 cars of plums and 300 cars of apples to prairie points farther east.

The Tempe Irrigation Canal Company will be incorporated within the Salt River Irrigation Project in Arizona, and a canal constructed which will cover 24,000 acres of land.

The largest wool producer in the United States is C. M. Blair of Billings, Montana. His clip this year amounted to a million and a half pounds which he has just sold to a Boston purchaser.

A variation of the demonstration train idea is being tried from Sprague, Wash., where a demonstration boat tour is made of points about Puget Sound. The boat will start July 20th and continue its journey till August 5th.

Farmers in Saskatchewan, Western Canada, are planning for a series of alfalfa experiments, and a $1000 prize is to be awarded for the best ten acre field which can be shown in 1914. The seed in the competing fields must be sown not later than the season of 1912. Artificially irrigated crops are not eligible.

Coulson's

EGG FOOD

If you were going to erect a large building, you would consult an architect—if you wanted some legal papers drawn up, you would go to a lawyer—because these men have made a special study of their respective professions.

The same principle applies to the feeding of your chickens. Presumably you have not the machinery or formula for making an egg food so that it will be just what your hens need.

That's why you should buy COULSON'S EGG FOOD. It is the result of years of study—it is scientifically mixed by experts with the right proportions of the various ingredients to give a balanced ration.

COULSON'S EGG FOOD means a healthy stock, with great laying power and eggs of quality. Saves you the time of mixing—provides a better feed—makes more eggs—means more profit, as COULSON'S EGG FOOD more than pays for itself, through making hens lay to their full capacity.

It is especially advantageous to use it at the present time, when the price of eggs is beginning to increase, and when also you are anxious to have your hens in good condition for the molting season.

Hens eat only what they like, but there are many foods they must have, and which must be mixed with their regular food so that they get the desired quantity. The only way the food can be mixed is by improved machinery—that's why you should feed COULSON'S EGG FOOD.

Get it at your dealer's; anyway send for our Catalog which tells about the familiar Coulson Products and gives valuable information about Poultry Raising.

Coulson Poultry & Stock Food Co., Petaluma

Germain Seed & Plant Co.,
Distributing Agents for S. California

The Mandy Lee Incubator

Why Is It Better?

Both ends are metal, no warm pipes touch wood at any point, but are carried through metal and asbestos. It is fireproof.

There are no hot pipes over the eggs giving some of them too much heat and toughening the yolk of the egg, thus causing the chick to die with bowel trouble. Every egg gets the same heat, so that all have an equal chance to hatch.

With our improved moisture pan and hygrometer the moisture may be kept absolutely correct, which will rot the shell and ripen the membrane. With our new system of ventilation, which is on the level just as the best hen ventilates her nest, with no up or down movement of air,

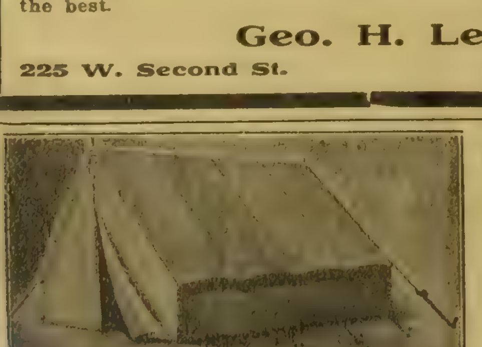
Every Egg Gets Fresh Oxygen All the Time

and not just for a few minutes while the eggs are being turned. With the right heat, right moisture, and right ventilation, you furnish the right kind of eggs and what may you expect? Just what we tell you, more chicks ready to grow and thrive than you have ever turned out, not counting an exceptional case, but **all the time.**

Lee's goods are all of the same character, always the same and always the best.

Geo. H. Lee Co.

225 W. Second St. Los Angeles, Cal.



TENTS

NATIONAL TENT & AWNING CO.
248 E. Fifth St., Los Angeles, Cal.

Phones: Main 1688; F1176

Manufacturers of ***The Best Tents*** on the market. Our Fumigating Tents hold the Gas and our Irrigating Hose hold the Water. Write for Catalogue No. 22.

Profit in the Poultry Yard

We solicit short articles of a practical nature from the fancier and utility breeder, giving their experience with poultry. All inquiries pertaining to feed, management, disease and its prevention will be answered through these columns.

ROUP.

THIS disease is the bane of the chicken growers in every state in the Union. It is no more prevalent in California than it is in other states, but we have it here in places where the wind sweeps through the hills, and wherever chickens are kept in crowded coops.

As the chicks grow, they require more room at night, and very often outgrow their roosting places before we realize how fast they are sizing up. Then is when the trouble begins. Crowded and hot at night, sometimes perspiring and panting for breath, they weaken, and when we let them out in the fresh morning air they fairly stagger and quickly huddle to get warm again. Then they take cold, their eyes begin to froth, nostrils to discharge, and unless promptly treated, run into a roupy condition which unfits them for further service. The oldest treatment we have any record of, is what is called the kerosene treatment and if used at the first, sometimes works wonders. Pour a teacupful of kerosene oil on a pail of water where it forms a coating, as it floats and does not mix. Then take the birds affected, one by one, and with a forked stick, hold their heads under while you slowly count three. This forces the fluid through the head and into the throat. Lift them out and wipe dry, and sometimes this will be all the treatment necessary. It is well, however, to put a teaspoon or two of the oil on the drinking water for a few days, as this obliges them to take a small dose every time they take a drink.

This treatment is recommended by Dr. N. W. Sanborn, who says he has known it to cure bad cases which were afterwards sold to the butcher in good condition. This happy (?) termination does not always reward the efforts of the amateur physician, so the following symptoms now develop. The roupy bird goes off by itself, is dull and listless, moping around as though longing for death, with its aching head hid under its forlorn little wings just as we feel when laboring with a hard cold ourselves. Soon the eyes become stuck shut with the sticky discharge, and the bird almost starves to death from just being unable to see to eat. Again it eats voraciously, fouling the food and water and spreading contagion to the rest of the flock, if not isolated. Sometimes there is just fever, and usually the head is the most feverish. In this case the eyes are apt to swell, or, rather, the membranes near the eyes, for the eyes themselves are seldom affected unless the swelling becomes so large as to destroy them entirely, because there is not room enough for both eyes and tumor. This must be a terribly painful affliction, and the more merciful way is to use the hatchet on such a fowl, rather than attempt to cure it at a greater expense of time and trouble than it is worth. Bear always in mind the fact that a bird which has had roup in such severe form is unfitted for a breeder, and then count carefully the cost of medicine, time and feed, until it gets into laying or marketing condition, and nine times out of ten the cheaper cure is the oft quoted hatchet.

Sometimes the disease seems arrested, and the symptoms abate, but the fowl gets thinner and thinner, although it may eat well. A diarrhoea sets in, and it lies around and dies in a few days after this occurs. Roup is highly infectious, therefore all birds even slightly affected should be carefully kept by themselves and the dishes used for them, well scalded and cleaned before using for other flocks.

Roup may also run into a diphtheritic stage, and form canker and false membranes which fill the head and throat until the bird chokes to death. This form is sometimes cured by painstaking methods, but "what's the use?" Only a highly prized show bird is worth such efforts, and should not be shown in company with healthy birds even then, but unscrupulous people not only sometimes do this, but sell them for long prices as well.

Again, like a cold in the human being, the disease may run into consumption, in which case the bird mopes around for months, eating well, but never laying an egg, growing gradually thinner and thinner until it dies from exhaustion, apparently. Take it "for and by" as the old folks say, it pays better to prevent than to cure the dreaded roup, and prevention means catering to the fowls' comfort and providing sanitary surroundings and pure and plentiful food.—Mrs. Frank Metcalf.

BULLETINS ON POULTRY.

The following list of Bulletins issued by the Department makes a valuable addition to the poultryman's library and may be had for the asking of the congressman representing the district of any one wishing them or possibly by writing direct to Secretary Wilson. The list is compiled by the Colorado Agricultural College.

Breeds.

Standard varieties of chickens. Farmers' Bul. No. 51.

Death.

Causes of death in young chicks. Farmers' Bul. No. 309.

Disease.

Gape disease of chickens. Farmers' Bul. No. 84.

Dressing.

Dressing and packing poultry for shipment. Farmers' Bul. No. 144.

Ducks.

Ducks and geese of standard breeds. Farmers' Bul. No. 64. Recent experiments in feeding ducks. Farmers' Bul. No. 107.

Eggs.

Fertility of eggs. Farmers' Bul. No. 251. Food value of hens' eggs. Farmers' Bul. No. 97. Nest box for keeping individual egg records. Farmers' Bul. No. 114. Preserving eggs. Farmers' Bul. No. 296. Relation of feed to the flavor of eggs. Farmers' Bul. No. 122. Selling eggs by weight. Farmers' Bul. No. 122.

Feeding.

Animal matter a necessity for poultry. Farmers' Bul. No. 97. Condimental and medicinal cattle and po try foods. Farmers' Bul. No. 144. Dry feeding and self-feeders for poultry. Farmers' Bul. No. 244. Grit and mineral matter for chicks. Farmers' Bul. No. 225. Ground grain vs. whole grain for chickens. Farmers' Bul. No. 84. Skim milk for young chickens. Farmers' Bul. No. 84. Substituting snow for water for poultry. Farmers' Bul. No. 309.

Food.

Digestibility of fish and poultry. Farmers' Bul. No. 276. Poultry as food. Farmers' Bul. No. 182.

Geese.

Raising geese for profit. Farmers' Bul. No. 65. Ducks and Geese, standard breeds. Farmers' Bul. No. 64.

Guinea Fowl.

Guinea fowl and its use as food. Farmers' Bul. No. 234.

Housing.

Construction and Ventilation of poultry houses. Farmers' Bul. No. 227. Successful brooder house, Farmer's Bul. No. 225.

Incubators.

Evaporation of eggs and other factors which affect incubation. Farmers' Bul. No. 309. Natural and artificial incubation of chicks. Farmers' Bul. No. 281.

Laying Hens.

Number of laying hens that may be profitably kept in one pen. Farmers' Bul. No. 114. Rations for laying hens. Farmers' Bul. No. 186.

Management.

Healthy poultry. Farmers' Bul. No. 305. Poultry management. Farmers' Bul. No. 287. Suggestions for amateur poultry raisers. Farmers' Bul. No. 237.

Manure.

Preservation and value of hen manure. Farmers' Bul. No. 210.

Moulting.

Producing early moulting in hens. Farmers' Bul. No. 186.

Squab.

Squab raising. Farmers' Bul. No. 177.

Turkeys.

Recent experiments with turkeys. Farmers' Bul. No. 225. Turkeys, standard varieties and management. Farmers' Bul. No. 200.

WHEN FORCING EGGS.

If your flock is large enough separate the layers from the breeders and mildly force for eggs while eggs are high. This forcing can be done in several ways. A little cut green bone, an extra touch of blood meal in a spiced mash fed in the morning, warm mashes nicely spiced with a dish of pepper added. Add charcoal to all mashes throughout the winter. Cracklings may be also fed, either in mash or separately. Lots of succulent green food in addition to some good cut clover or alfalfa hay. Sprouted oats during the winter will also help the egg yield. Soaked oats mixed with a little bran or shorts and fed warm is another good food. The food question must be studied right on the spot, according to climate, style of house, etc.

No rooster is needed for these layers. Eggs come as freely without as with the male bird's attentions. Another thing, do not be afraid of getting the pullets too fat for egg work. Pullets are oftener underfed than overfed during the winter months. In all our experience we have never been able to make a pullet too fat to lay during her first winter's egg work. Some winters all grain and meals have been hopper fed. The grain has been where they could obtain all they needed without any trouble. Other winters we have tried feeding all grain in the litter with only the mash before them. No material difference was noticed in the egg yield in either case. The main thing about winter egg work is to have some choice pullets, vigorous and strong. Have them mature about October when the cold weather is just beginning. Once in full lay they will never stop until moulting time the following fall.—Green's Fruit Grower.

The comb is not only an ornamental appendage to a fowl—it is also an index to health. The color of the comb indicates the condition of the fowl. If the comb is pale, covered with spots, or dark purplish in color, it is quite certain that the fowl is out of condition. A well conditioned fowl shows a bright red comb. Fowls with very large combs are nearly always good layers and in vigorous health. We would not buy a male bird with a small, pinched comb but would choose one having a comb broad at the base, well set and of a size characteristic of the breed.

Poultrymen should remember that hens should always be kept busy searching for food, so that they may get sufficient exercise. The fowls should be sent to roost at night with full crops, and gotten off the roost in the morning to scratch in straw or leaves for grain during the day.

Charcoal is a good health producer. Give it to the fowls freely. Often it will correct minor ailments, such as slight bowel trouble or indigestion.

Take the roosters out of the laying pens, unless the eggs are to be used for hatching. Their room is better than their company.

Skimmed milk has been proved a valuable food for laying hens, according to experiments at the Virginia experiment station.

FIGHTING FROST WITH FIRE.

The Tennessee Experiment Station reports experiments in the use of fires as frost protectors as follows:

Throughout Tennessee, and the country generally, the peach crop is endangered by spring frosts, the greatest single cause of failure probably, in the peach industry. In the spring of 1908 and 1909 coal fires were lighted in the experiment orchard, and on the nights of March 15 and 16, 1910, wood fires were burned. In 1908 baskets were made of galvanized wire netting (chicken fencing), one-inch mesh. They were about 10x16 inches in size, and were set with their short edges resting on two bricks, thus affording draft. Coal fires were kept going in them, but required frequent attention. In most cases they were burned out in three firings, thus proving inadequate. The fires were placed 36x40 feet apart, in alternate spaces throughout the orchard. Two and a half tons of coal were used in keeping fires eight hours per night for three nights in two acres of orchard. The temperature within the orchard and beyond its borders was read by standard thermometers hourly, the least difference being four degrees increased heat as the result of the fires, while on one night six degrees increased heat resulted. On March 15 and 16, 1910, wood fires were used, the same distance as noted above. Stumps removed in clearing land in the previous year were burned, and made better fuel than coal, the fires requiring less frequent attention. The minimum temperature outside the orchard was 21 degrees, and within the range of the heat from the fires the minimum was 27 degrees. Fortunately the weather was dry, and few of the buds were advanced enough to show the color of the petals. Some bloom was destroyed, but enough remains uninjured to insure a crop if no further frost injury comes.

Don't let your fowls get all run down during hot weather and molting time, but keep them in good condition.

Egg-More Booklet

tells you how. It is free. Send for it. Send us addresses of 5 persons in your vicinity who have fowls, and we will send you postpaid, an Anchor Egg Separator. For 20 addresses, we will also send The Poultry Manual, a book well worth 50 cents.

West Coast Mill
Office and Salesroom
115 Winston St. - Los Angeles

How Much Is Water Worth?

Water is very expensive if you are buying a disinfectant that is half water.

Coulson's CRESOLENE

is a powerful disinfectant and germicide made from coal tar. You add the water yourself to make the disinfectant desired strength. COULSON'S CRESOLENE must be diluted from 20 to 100 times its own bulk. It is not poisonous—more powerful than copperas, cloride of lime and other well-known disinfectants. It forms a milky emulsion that only costs 1 1-4 cents a gallon. It is the cheapest disinfectant on the market and at the same time the best. Use it on stock—poultry—dogs or as a general disinfectant and insecticide.

If your dealer does not keep it, order direct from us. Quart cans—50c. Gallon cans—$1.25. Freight free on gallon orders.

COULSON POULTRY & STOCK FOOD CO.
Petaluma, Cal.

We are So. California Agents for
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WINSLOW'S REDS

Annual Reduction Sale. Breeders at Bargains. Good Utility Stock Cheap. Eggs at Summer Rates. Write for prices.

DR. CHAS. E. WINSLOW
Proprietor
Bx 368 Cor. Charlotte and Greystone, Monrovia, Cal

The Arenberg Brooder Heater and Stove

Perfectly simple, safe and cheap. Burns distillate, furnishes steady, free flame and easy to manage as brooder, heater or stove. Write for details. **H. F. ARENBERG** Petaluma, Cal.

George Lasher
The Chicken Hatcher
15 Kent St., Petaluma, Cal.

I am now booking orders for July and fall delivery. Day old chicks. White leghorns, Black Minorcas and Barred Plymouth Rocks. Try some July Chicks; a good time to grow and do well. Can ship anywhere on Pacific coast.

F. Baldwin's WHITE LEGHORNS

1st Ckl. A.Y.P. Ex.

Won 9 prizes from 9 entries at A. Y. P. Ex. and 4 1sts at San Jose, '09. Bred as layers first. Stock any age for sale. Eggs $6 per hundred. Settings $2 up. Send for free booklet and prices. ***46 Washington Ave., San Jose, Cal.***

Rancho Mirasol
White Leghorns
Pasadena, Cal.

RHOADES & RHOADES
Expert Live Stock AUCTIONEERS
Sales conducted in all parts of California and adjoining States. Write for dates and terms
Twenty-five Years' experience
830-32 South Main St., Los Angeles

When writing advertisers, mention Cultivator.

2000 WHITE LEGHORN HENS, $10 PER DOZEN
RIGHT NOW

We have 2000 White Leghorn hens and pullets contracted for. Most of them are 10 months old; as long as they last we offer them at $10 per dozen in dozen lots and we pack and ship them anywhere. Cocks are $2 each.

These hens and pullets are all young and are standard stock, all are pure white and healthy. If you need hens or pullets of the White Leghorn, right now is the time to get them. By September they will be selling at $1 each or more and will be practically impossible to obtain.

We are selling three-months-old Buff Orpington pullets and Rhode Island Red pullets at $9 per dozen. Write us for any kind of grown poultry. FREE 32-page book mailed on request. We are still selling 10,000 chicks per week.

Pioneer Hatchery Co., 112 E. 8th, Los Angeles

MILK COOLERS

See our
Weber Cone Coolers
Sanitary and Durable
Only $3.00

Weber Tubular Coolers
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Will cool 50 gallons of milk per hour to within three degrees of temperature of water.

Star Copper Coolers

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Manufacturers and Importers of Machinery and Appliances for Dairy and Creamery
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Holds World's Record

FOR CLEANEST SKIMMING

More prominent, practical dairymen and breeders **use** and **endorse** U. S. Separators than **all** other makes.

These many long-headed, business dairymen use U. S. Separators, not because some blazing advertisement has hypnotized them into buying, because it's "cheap." **Sound reasoning** of its **many superior advantages** *only* persuaded them. The *best* will always have the *best*.

WON GRAND PRIZE
UNITED STATES SEPARATORS
HOLDS WORLDS SKIMMING RECORD
ONLY GRAND PRIZE ON CREAM SEPARATORS SEATTLE 1909
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THE 1910 INTERLOCKING STYLE U.S. CREAM SEPARATOR

is emphatically the Best and the only Separator to Buy.

Because,
1st. It skims the **cleanest.**
2nd. It's built the **strongest.**
3rd. It's the **easiest cleaned.**
4th. It's the most **convenient.**
5th. It requires the **least power.**

The U. S. defeated all other separators at the Alaska-Yukon-Pacific Exposition, Seattle, on these five essential points and

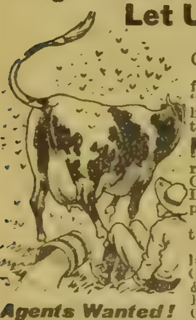
Won Grand Prize 1909

Beautiful Illustrated Catalogue No. 20 ill give you all information.
VERMONT FARM MACHINE CO., Bellows Falls, Vt.

All orders promptly filled from warehouses at Portland, Ore. Stockton, Cal., Helena, Mont. and Ogden, Utah. Send all orders to Bellows Falls, Vt.

Try Conkey's Fly Knocker 15 Days Free!

Let Us Send You a Gallon Can, Express Prepaid



Horses lose flesh and shirk work when bothered and bitten by flies. Cows give less milk when tortured and frenzied by these pests.

In the name of humanity and for the sake of your pocketbook, keep your stock free from torturing, maddening, disease-breeding swarms of flies this summer! "Fly Knocker" solves the problem. It relieves the distress of your stock and helps rid your barn of the fly nuisance. Conkey's Fly Knocker is the greatest boon to fly-tortured animals that the world has ever known.

NO DEPOSIT REQUIRED! Send today for a gallon can on Free Trial. At the end of 15 days, if you are delighted with the results, send us $1.25, which includes express to any point in California, Western Oregon and Western Washington. If located east of Seattle or Portland, or in Idaho, Montana, Utah, New Mexico or Nevada, send $1.50. If, however, it fails to please you, you don't owe us a cent.

If your local dealer handles Conkey's Fly Knocker, cut out ad and give to him, thus saving express. If not, send order to our nearest distributor, as follows:

Germain Seed Co., Los Angeles, Cal.; Coulson Poultry & Stock Food Co., Petaluma, Cal.; Routledge Seed Co., Portland, Ore., Seattle Seed Co., Seattle, Wash.; Church Seed Co., Spokane, Wash.; Great Falls Drug Co., Great Falls, Mont.; Smith & Co., Boise, Idaho, Vogeler Seed Co., Salt Lake City, Utah: Hill's Seed Store, Phoenix, Ariz.

Agents Wanted! Or send to **Conkey's Laboratories,** Dept. 35, **Cleveland, O.**

CUTTER'S
Anthrax
and
Blackleg
VACCINES

Are given the preference by 80% of California Stockmen because they give better results than others do.

Write for prices, testimonials and our NEW booklet on Anthrax and Blackleg.

The Cutter Laboratory
Berkeley, California

THICK, SWOLLEN GLANDS

that make a horse Wheeze, Roar, have Thick Wind, or Choke-down, can be removed with

ABSORBINE

or any Bunch or Swelling. No blister, no hair gone, and horse kept at work. $2.00 per bottle, delivered. Book 3 D free.

ABSORBINE, JR., for mankind, $1.00, delivered. Reduces Goitre, Tumors, Wens, Varicose Veins, Ulcers, Hydrocele, Varicocele. Book free. Made only by

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For sale by Langley & Michaels, San Francisco, Calif.; Woodward, Clark & Co., Portland, Ore.; F. W. Braun Co., Brunswig Drug Co., Western Wholesale Drug Co., Los Angeles, Calif.; Kirk, Cleary & Co., Sacramento, Calif.; Pacific Drug Co., Seattle, Wash.; Spokane Drug Co., Spokane, Wash.

Geo. C. Roeding, Fresno, Cal., breeder
Thoroughbred Holstein Bulls and Heifers
Thoroughbred Berkshire Boars and Sows

JOHN LYNCH
Breeder of Registered **Shorthorns**
MILK STRAIN
Box 321 *Petaluma Cal*

KENDALLS SPAVIN CURE

Never failing cure for Spavin, Curb, Splint, Ringbone, all Lameness. Also a great family liniment. $1 a Bottle; 6 for $5. Ask druggists. "Treatise on the Horse" free at drug stores or address
Dr. B. J. KENDALL COMPANY
Enosburg Falls, Vt.

Live Stock and Dairy

Dairymen and stockmen are requested to write of their experience. Mrs. Sherman is always willing to answer queries and this, with experience of other workers, will make this department of greater value.

THE OX WARBLE.

THE ox warble is the larval or worm stage of a fly known by various names, such as the eel fly, striped hypoderma, grub or warble fly, etc.

This fly is found most abundant in the southern states, while in the extreme, northern states very few or none are found. This fly has four stages; the egg, or ova, the larval, or worm, the cocoon, or pupal, and the adult, or fly. It was thought by early writers that the fly laid the eggs in the skin of the backs of cattle. This idea has long ago been proved to be wrong by Dr. Cooper Curtice. The writer has been able to confirm Doctor Curtice's story of the history of the various stages of this parasite, which is as follows: The fly lays the eggs, cementing them to the hair in the region of the heel of cattle, where, perhaps the crawling of the minute larvae, or worms, over the skin causes the animal to lick the part and thus gets the larvae into the mouth. They now become lodged in the mucous membrane (lining) of the oesophagus and here pass a part of their worm stage. The part in which they are imbedded is not inflamed and no serious injury is produced at this point. The worm at this stage can be found in this locality during the summer months. At this point they never reach a size greater than about a half inch in length and three-sixteenths in diameter. After passing this part of their life, they leave the oesophagus and find their way between the muscles, through the loose connective tissue, and become lodged under the skin in the region of the withers and down the spinal column. The question has often been asked: "Why do they lodge here?" I will answer that by asking: "Why a lung worm upon being swallowed and reaching the stomach finds its way to the lungs and will not develop in any other part of the body?" These tumors in the region of the back grow as the worm grows. At the summit of each tumor will be found a hole, which also grows as the tumor enlarges. In April and May (depending upon the latitude) they are fully developed and leave the tumor. This they are enabled to do from the fact that they are soft and contractile. It has been observed that most of them leave the tumors in the morning. They now burrow into the ground and form around them a cocoon in which they pass through the stage which brings them to the adult, or fly stage again. The length of time they are parasites in the animal is about ten months. The length of time in the ground, from four to six weeks, and the length of the life of the fly from two to four weeks, making the entire life history about twelve months.

The warble in the back does not cause a great deal of injury to the host. Some irritation is at times manifested. The warble can be easily squeezed out by gentle pressure at the base of the tumor. The injury to the hide industry (in those cattle slaughtered that are "grubby") is considerable. Everywhere there is a tumor there is a hole, and when the hide is tanned, a larger hole results.—B. F. Kaupp, Colorado Agricultural College.

Cream Separators, all sizes and prices. O. J. Weber Co., 225-227-229-231 East Sixth street, Los Angeles.

LOSSES IN MANURE.

One of our experiment stations has shown by careful investigation that when the stable manure is piled up and left exposed to the rains the loss from leaching of the fertile elements is very large. The New Jersey station finds that manure exposed for 100 days lost over one-half of the nitrogen, one-half of the phosphoric acid, and the same proportion of the potassium had been lost. More than one-half of the constituents had been lost by an exposure of less than four pounds. Work from other experiment stations confirms this.

A great deal of valuable manure is also lost in badly arranged stables, where there are poor facilities for recovering the manure. The valuable liquid manure is lost by drainage.

The best way to save all the fertile elements in manure is to haul it on the fields and meadows and spread it evenly over the land. Washed into the soil it is preserved for the next crop.

OLEO, RENOVATED BUTTER, ETC.

Answering a query as to oleo, butterine, renovated butter, etc., the Rural New Yorker says:

"Oleomargarine and butterine are mixtures of various fats, such as lard, beef fat, cotton-seed oil and a small quantity of butter. These fats are mixed or blended by various processes. "Renovated butter" is usually butter that has gone bad or rancid, melted and treated to drive off the bad smells, and then cooled and handled so as to look as much as possible like fresh butter. There is not supposed to be anything in "renovated" butter except butter fat. It is usually made from stuff that could not be sold without being treated."

The harvesting season is beginning in the Walla Walla grain fields.

Anthrax Cure, Milk Fever Outfits. See O. J. Weber Co., 225-227-229-231 East Sixth street, Los Angeles.

Headquarters for
Poultry Supplies
and
Reliable Seeds
at Right Prices
West Coast Seed Co.
111-113 Winston St., Los Angeles
Between 4th and 5th St. near Main

Thoroughbred Poland China Swine
Barred Rock Poultry
High Grade Stock of Best Strains.
Young Stock For Sale
M. Bassett ***Hanford, Cal.***

HINTS ON BUTTER MAKING.

Making good butter is the most important matter concerning the creamery managers and dairymen of the San Joaquin Valley and other parts of California, but more particularly in the Valley, because our climate in the warm summer months is not so favorable, as that of the coast counties.

The quality of butter made at the creamery and the price received therefrom depends to a great extent on the care taken of the cream by the dairyman.

A few simple rules for producing good cream are as follows:

First—The surroundings and general conditions of the dairy must be sanitary.

Second—The tinware and separator must be washed thoroughly and well aired each time after using.

A Cleft in the Desert Hills.
Here and there the sunburned ridges show the very skeleton of the earth.

Third—On going to milk in the evening cold well water should be pumped—enough to fill one can—this cools the can and when the first pail of milk is ready to be strained, pour the water into another can and strain the milk into the cool one. The cans should be placed in the shade and wet sacks put around them if possible, When ready to separate the milk, pump more cold water into the can which is to receive the cream. By the separator have a half barrel or a tub with a rack fixed to hold the cream cans straight. Partially fill this tub with cold water and as the cream fills the can it will settle down into the water; then have a small pulley at the top of a pole or on a tree; put a stout cord through this pulley, with two hooks on the end of the rope—these hooks fasten in the handles of the cream can. Put two well-soaked sacks around the can and haul it up to the pulley, thus raising it away from the heat of the earth to an elevation where the air is circulating freely, causing a rapid evaporation. The water evaporating carries away the units of heat from the cream, leaving it in good condition. In thé morning the can of cream should be lowered and placed in a sack cooler, which everybody should have. When the morning's cream is separated then a wet sack should be put around each can and it should be taken at once to the creamery.

Cream handled in this way will produce the best butter, for which the best price can be obtained, and the dairyman is well paid for the little extra pains taken with his cream. Besides this the . sample taken out at the creamery for testing will be smoother and in such a condition that the testor can make a correct test. A large amount of the cream sent to the creameries is of too low a test in butter fat. No cream should be sent to the creamery in summer time that will not test 35 per cent. At this per cent of butter fat the sample for testing will not be full of hard particles of curd, made so by cream being sour. The preservative tablet used will keep sweet cream from getting sour in the sample bottle, but will not make a sour sample sweet. A great deal of the trouble the creamery has with the patron is on account of the patron skimming his cream too thin. This thin cream sours quickly in warm weather. The sample from this cream divides into whey, curd and fat in the bottle and it is almost impossible to emulsify the contents so as to get a perfect test.

There are many other important reasons why a dairyman should skim his cream to test at least 35 per cent butter fat and follow these rules for care of the cream. He is the only one to reap the benefits, especially if he is a patron of a co-operative creamery.—J. P. Murphy, Manager, Tulare Co-Op. Creamery Assn.

Do your cows milk hard? Send 50 cents for teat expander. O. J. Weber Co., 225-227-229-231 East Sixth St., Los Angeles.

TRAINING THE COLLIE.

Whether whipping will spoil the Collie depends altogether upon the disposition of the individual dog. If he is somewhat timid he should never be touched with the whip; but if head-strong, a touch with the whip will often do a world of good. The older a dog gets the more grit he will have. There is just as much difference in the disposition of dogs as in human beings. Some children will learn to talk and walk a great deal sooner than others, and some dogs will work with cattle when six months old, while others will not until they are one or two years old. Often the latter make the better dogs. As a rule they are slow drivers and can be kept under control better than the fast drivers. The trouble with many folks is they think all that is necessary is to send for a pup, pay a good price, and it will grow up and become a fine trained dog, without any help from its owner. This is a great mistake. Another great trouble is that the children are permitted to play with the dog altogether too much. Sometimes they hitch them up and undertake to drive them. Other times they whip them or scold them. The owner may know nothing about this, and when he undertakes to train the dog the latter will run away and act as if he was afraid. Then the owner loses patience and is likely to abuse the dog, thus making a bad matter worse. No man who loses his temper can train a Collie dog.

A dog should never work with cattle until he is at least a year old. If he is anxious for work, use him on sheep or pigs, and he is not so likely to be hurt by them. The main thing in training a Collie is to make him understand what you want him to do. Speak gently in plain words, using as few words as possible, and always using the same words for the same thing, and at the time of using the words make a gesture with the hand. Encourage the dog freely and be slow to scold. Praise him even when he has not done exactly what you want him to do or in exactly the way you would like to have him do it. Repeat the same lessons day after day until the dog understands what you mean by the words and gestures used. Don't talk to him in a gruff voice, and do not misuse him in any way.

There are days when your dog will not feel like working well. You have the same experience. Have some consideration for him at these times, and do not under any circumstances lose your temper. When the dog finally learns the lesson you have been trying to teach him be lavish with your praise.—Iowa Dog Trainer in Wallace's Farmer.

THEY SWELL IN THE MIDDLE.

A Cultivator representative working in Kings county is picking up a great fund of information as to value of various stock feeds, and, incidentally, poetry. While in Hanford recently he ran across one of the contributing staff of the Cultivator, Mr. N. C. Blanchard, and secured from him the following classic:

And now that same stockman named
Biddle,
Helps out with the raisin crop riddle;
Instead of the figs
He feeds raisins to pigs,
And smiles as they swell in the middle.

One raisin grower of Kings county recently secured a large lot of raisins damaged by packing house fire and used them in the manufacture of pork. This was the inspiration of the limerick.

The condition of the weather will govern the length of time it will be necessary to keep a newly farrowed sow in close quarters, but she should not be denied access to the open air. Pigs should not be allowed out in a cold rain or where they will receive the shock of cold winds. Where they can do so witout danger they should be put in the sun within 24 hours after birth, and after that the best practice is to let them run in and out at will. Neither the sow nor very young pigs should be permitted to run in pasture early in the morning if the grass is tall and wet with rain or heavy dew.—From Coburn's Swine in America.

Warranted
to give satisfaction.

GOMBAULT'S
CAUSTIC BALSAM

A safe. speedy and
positive cure for

Curb, Splint, Sweeny, Capped Hock, Strained Tendons, Founder, Wind Puffs, and all lameness from Spavin, Ringbone and other bony tumors. Cures all skin diseases or Parasites, Thrush, Diphtheria. Removes all Bunches from Horses or Cattle.

As a **HUMAN REMEDY** for **Rheumatism, Sprains, Sore Throat, etc.,** it is invaluable.

Every bottle of **Caustic Balsam** sold is Warranted to give satisfaction Price **$1.50** per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars, testimonials, etc. Address

THE LAWRENCE-WILLIAMS COMPANY, Cleveland, Ohio.

Live Oaks Farm
Frank A. Meacham, Proprietor.
Importer and breeder of RED POLLED CATTLE, SHROPSHIRE SHEEP, RAMBOUILLET SHEEP, HORNLESS AMERICAN MERINO SHEEP., Both sexes for sale. Take electric car at Petaluma or Santa Rosa for LIVE OAKS STATION. Address all mail to
Petaluma, Sonoma Co., Cal.

The Whiting Jersey Stock Farm Co.
Is making the very best strains of blood fresh from the island of Jersey a specialty. **Whiting Jersey Stock Farm Co., Heber, Cal.**

VENADERA HERD
Registered A. J. C. C. Jerseys
St. Lambert and Flying Fox Blood. Margery Golden's Fox heads the Herd. Young stock for sale. **GUY H. MILLER, Prop., R. 3, Modesto, Cal.**

Money Making Little Liners

In this department we will insert your advertisement under a classified head for 1½ cents per word. No ad accepted for less than 25c. Our classified columns are the clearing house for our many thousand readers.

MACHINERY.

FOR SALE—SECOND HAND
WINDMILLS, TANKS,
PUMPS, ENGINES,
FARM MACHINERY,
that will do the same work as new at half the price. Domestic and irrigating windmills and tanks; all sizes. Tanks from 50 gallons up to 50,000. Engines—three 2 H. P. Fairbanks; 3 H. P. Dempster, 6 H. P. Fairbanks, 6 H. P. White & Middleton. 9 H. P. Moore, 10 H. P. Lambert, 18 H. P. Western, 25 H. P. self-contained engine and mining hoist, brand new 2 and 4 H. P. steam engine and boilers. Farm wagons, threshing machine, baler, header, Fosmer gang plow and Venicia disc gang breaking plow, road plow, sacker, hay truck, wagon tanks, slip and Fresno scrapers, wood sawing outfit mounted, splitter, weeder, fruit crusher, bone grinder. Most anything a rancher wants, second hand. DEMMITT CO., upstairs 120 N. Main, Los Angeles.

FOR SALE—GASOLINE ENGINES, several sizes, standard makes, taken in exchange for new ones. Have been thoroughly overhauled, will guarantee like new. Also pumps, motors, air compressors, etc. We have what you need, either new or second hand, and save you money. BAILIE & BRANDT COMPANY, 943-945 No. Main St., Los Angeles, Cal.

TREES.

FINE LARGE EUREKA LEMON AND Valencia Orange trees, fine for replanting. Choice lot of fine Wash. Navels. Order quickly. They are going. Home 'phone 1731. JOHN R. KING, Whittier, Cal.

MARSH SEEDLESS GRAPEFRUIT—600 large trees for sale. E. S. THACHER, Nordhoff, Cal.

MR. NURSERYMAN—WHAT DO YOU need? What is your overstock? BALLOU'S NURSERY, Pasadena, Cal.

LATE VALENCIA ORANGE TREES for sale for May and June delivery. ADOLPH RIMPAU, Anaheim, Cal.

FOR FIRST CLASS VALENCIA AND Navel orange trees and Eureka lemons see A. G. SNOW, Oxnard, Cal.

WANTED.

WANTED—YOUR WORK PAYS THE expense to learn a trade that pays $5 a day, in a few months' time; electricity, automobiles, plumbing, bricklaying; actual contract jobs; 200 students last year. UNITED TRADE SCHOOL CONTRACTING COMPANY, 647 Pacific Electric Bldg., Los Angeles, Cal.

FARMS WANTED—WE CAN TURN A quick sale for you, as we are in close touch with buyers everywhere. Let us show you how to save agents' commissions. Or if you want to buy property of any kind, anywhere, write us. AMERICAN INVESTMENT ASSOCIATION, Minneapolis, Minn.

EDUCATED GERMAN, PRACTICAL dairyman and rancher, wishes position as superintendent on large dairy ranch. Send letters under name of A. BADER, General Delivery, Pasadena, Cal.

WANTED—HAVE DEMAND AND OPportunity for sale and exchange of suburban, beach ,and farm properties. PARRISH BARKER, 207 Union Trust Bldg., Los Angeles. Phone A 3272.

HORTICULTURAL PRINTING.

THE KRUCKENBERG PRESS, 123 South Los Angeles St., Los Angeles, Cal., makes a specialty of Horticultural Printing and Engraving. Cuts and illustrations of all standard, economic and ornamental plants on hand and subject to the use of patrons without cost. Samples and estimates cheerfully furnished. Remember, we design, write, engrave, bind and print; in brief, do the "whole thing," at no additional expense to the customer. Correspondence a pleasure; a personal visit a joy. Headquarters for catalogues and quadri-color printing.

RABBITS.

FOR SALE—EUREKA RABBIT WARren Co., 928 Valverde St., Los Angeles, Cal., Wright and King, props. 150 fine bred New Zealand hares and 200 fine bred Belgian brood does and stud bucks from $1.00 up. Your correspondence is solicited.

BELGIAN HARES, CHOICE STOCK, Two months old, 50c; four months, $1.00; five months, $2.00; mature, $2.50. J. K. PIERCE, R. 2, Box 15, Petaluma, Cal.

RARE PLANTS.

FINEST THINGS FOR LAWNS. Feathery, not running, Bamboos; Arundinaria falcata, and Arundinaria Falconeri. For sale by the MONTARIOSO NURSERY, Box 1500, Santa Barbara, Cal.

WILD PLANT IMPROVEMENT GARdens, Santa Ana, California. NEWTON B. PIERCE, Proprietor. Rare choice ornamentals and new fruits from all lands.

POULTRY.

HOW TO MAKE MONEY—MRS. A. Basley's New Poultry Book is just out. It is without exception the most wonderfully complete manual on the subject of successful poultry management ever written. The secret of how to raise every turkey hatched and the "Basley Formulas," now published for the first time, are worth many times the price of the book. The "Western Poultry Book" is a practical book by a practical woman. Price $1.00. Address Mrs. A. Basley, Box 77, Venice, Cal. Send postal.

CHICKS! CHICKS! CHICKS! CHICKS!
2500 Per Week.
Barred Rocks, Rhode Island Reds, White Rocks, Brown and White Leghorns. We ship safely everywhere within 48 hours. Send today for free 32-page book. Tells all about the chicks we offer and gives prices on laying hens, pullets, cocks, etc. PIONEER HATCHERY CO., 112 East 8th St., Los Angeles.

FOR SALE, AT A BARGAIN, AT 956 E. 33rd street, about 60 White Wyandotte hens and about 250 head of young stock, ranging from two weeks to four months, all from prize stock. Together with incubators, brooders, Philo houses, and everything complete for a start in the chicken business. By a party who has made a success of it, but is forced to sell on account of business in the East which will require his constant attention.

150 RHODE ISLAND RED HENS, yearlings and two-year-olds, have been left with me to sell. 50 at $1.00 each, 50 at $1.25, 50 at $1.50. To the purchaser of the entire lot a discount of 10 per cent will be made. CHAS. E. WINSLOW, Monrovia, Cal. Box 368, phone 181.

POULTRY WANTED—WE PAY THE highest market price for all the local poultry we can get, no matter how large the quantity; also fresh ranch eggs. We remit immediately. ALLAWAY & LAYTON CO., 607 E. 3rd St., Los Angeles, Cal.

CHOICE S. C. WHITE MINORCA PULlets, two months old, 75c; two months cockerels, 75c; three months, $1.00; between four and five months, $1.50. Twelve hens, $1.50 each, cock $2.00, good breeding stock. A. H. BURLINGAME, Westminster, Cal.

FOR SALE—EIGHT HENS AND COCK, Rose Comb Black Minorcas (Northrup strain). Seven hens and cock, White Minorcas. All pure bred, fine stock. Also pullets and cockerels, and Rhode Island Reds. C. U. CHAMBERLIN, Gem City Yards, Los Gatos, Cal.,

FOR SALE—PURE BRED BARRED Plymouth Rock chickens. Crane and McClanahan strains. March hatch. $10.00 a dozen, $1.00 each. Mated pens. MINNEWAWA VINEYARD, Fresno, Cal.

LOVELL'S BLACK MINORCAS
California's
greatest egg producers
Pedigreed, trapnested, scientifically bred. Free circular. DAVID J. LOVELL, 5720 So. Park Ave., Los Angeles, Cal.

BONNELL'S S. C. BLACK MINORCAS win every time, the best that can be secured at any price. Eggs reduced to $1.50 per setting. A few cockerels for sale. C. C. BONNELL, State Vice President American Black Minorca Club, 2919 Brighton Ave., Los Angeles.

WHITE INDIAN RUNNER DUCKS. Some fine breeding stock for sale. Also eggs from Howard's strain White Leghorns. J. C. CARLYLE, R. F. D. 4, Box 249, Los Angeles. Successor to Mrs. Grey. Phone Sunset South 6342.

LODI HATCHERY—JUST HATCHED, chicks from healthy, heavy laying stock. Booking orders for later delivery. T. C. HAWLEY, 504 E. Elm St., Lodi, Cal.

FOR SALE—EGGS FOR HATCHING from thoroughbred Mammoth Pekin and Indian Runner ducks, 75c per 12, $5.00 per 100. A. E. NELSON, El Monte, Cal.

THEY LAY AND WIN. ROSE COMB Black Minorcas. ELEANORE MINORCA FARM, Route 1, Los Angeles, Cal. Stock for sale.

BLACK MINORCAS OF QUALITY—Eggs $5.00 per 100. Ask for club catalog. S. D. BICKFORD, Gardena, Cal.

LIVE STOCK.

BERKSHIRE HOGS — POPULAR strains. Pigs. Young brood sows bred to Kingsclere Duke 3rd 111812. G. B. REEVES, Mountain View, Cal.

REGISTERED SHORTHORN BULLS and Poland China Hogs for sale. Best breeding. P. H. MURPHY, Perkins, Cal.

JERSEY BULL FOR SALE. THREE years old, muley. A good one. NICHOLAS MARTIN, R. D. 13, Box 81, Los Angeles, Cal.

FOR SALE—DUROC JERSEY PIGS, six weeks old, $5.00 each. Address W. J. COLE, Anaheim, Cal.

FARM LANDS FOR SALE.

FOR SALE—815 ACRES IN SAN LUIS Obispo County. A typical dairy ranch. Plenty of wood, water, irrigable land, buildings, fenced and cross fenced. Orchards, vineyards, oranges, lemons and walnuts do exceedingly well here. 40 acres of land suitable for these. Price $21 per acre. For further particulars apply to MRS. F. A. CLINK, Pozo, Cal.

2285 ACRES CHOICE, DEEP, SANDY loam. Ideal for subdivision or Eucalyptus growing. Can be cultivated any day in the year. Southern Pacific Railroad runs through the ranch. Also close to deep water for shipping. Free from wind and frost. Now all planted to grain. Price $100,000.00 for limited time. GEO. W. SILL & CO., Watsonville, Cal.

CALIFORNIA FARM HOMES NEAR Sacramento. Fine neighbors. Fruit center. Poultry very profitable. Oranges and vegetables harvest all winter. Not one serious drawback. Best water and cheapest irrigation. No floods. Perfect health. $75 per acre; easy terms. New town and electric railway. B. MARKS, Twin Cities Colony, Box 13, Galt, Cal.

GARDEN GROVE—FOR SALE, 10-acre walnut grove at Garden Grove. Majority trees one year old, choice budded, balance assorted fruit and bearing walnuts. Exceptional combination of fine soil, cheap water and choice location, on Pacific Electric. Seven-room house and outbuildings. Price $7000. A. F. CLARKE, Riverside, Cal.

IRRIGATED LAND FOR SALE, cheap. In the Lower Rio Grande Valley of South Texas. Ideal climate. Good markets. Large crops. Special inducements to several practical irrigation farmers. Address MANAGER, care of Cultivator, at once, or AMERICAN RIO GRANDE LAND & IRRIGATION CO., Mercedes, Hidalgo County, Texas.

IF YOU WANT NO. 1 GOOD LAND, see me. I have four eighty-acre tracts, all level, three miles from good markets, good crops, water, fenced. One tract is improved. Price $50 to $80 per acre. One-half cash, balance five years, 8 per cent. WM. T. MANTZ, Santa Maria, Cal.

ORANGE GROVES—ALL SORTS, AGES, conditions and prices. Groves in best districts. Six year's experience. References all banks in Claremont and Pomona. A. W. RICHARDS, Claremont, Cal.

APPLE ORCHARDS, LARGE AND small, in the only apple producing section in California. The greatest section west of Missouri River. Write for booklet. GEO. W. SILL & CO., Watsonville, Cal.

FRUITS, FLOWERS, SUNSHINE, progress—all these invite investigating beautiful Hemet Valley, Southern California. Booklet free. WILLIAM KINGHAM, Hemet, Riverside County, Cal.

FOR SALE—EL CAJON GRANT LAND. In the heart of El Cajon Valley, 30 acres of choice vineyard, large house, cottage and barn; trays, boxes, etc. Close to proposed electric line. S. B. HAWLEY, 1548 D. St., San Diego, Cal.

FOR SALE—PERRIS VALLEY, 640 acres choice alfalfa land, close to railroad, water guaranteed, $50, big snap. STACY REALTY CO., 531 So. Spring St., Los Angeles, Cal., F 2115; or Stacy-Wagner Co., Riverside.

WAUKENA, A GOOD PLACE TO farm hogs, alfalfa, grain, fruit successfully. Write C. F. COLWELL, Waukena, Cal.

MISCELLANEOUS.

HAVING OPENED A DAIRY SUPPLY house, would be glad to see all my friends and former customers. When in need of dairy supplies, milk coolers, cream separators, milk cans, milk bottles, etc., write or call GUY F. KELSEY, 108 East 8th St., Los Angeles.

FOR SALE—1160 FEET SURFACE IRrigating pipe, 8 in., good as new, $150, f. o. b. Richfield or Anaheim. Address J. L. DAVEE, Olive, Orange Co., Cal.

Business Notes

OIL POTS.

In the minds of a great majority of fruit growers, previous to the valuable results obtained from the use of small oil-burning heaters in orchards to prevent frost damage, frost prevention was something intangible, unproven and hypothetical. Today it is one of the most certain things as a means of protection against the ravages of frost that has been discovered.

This method is simple, and the expense sinks into insignificance by comparison with the financial results obtained wherever used. In practice the plan of action is as follows: The Electric Frost Alarm Thermometer is mounted within a shelter and set up in the orchard, vineyard or garden to be protected, and connected by wire with the sleeping apartment of the person having charge of the work. The heaters are then distributed to the number of 80 to 100 to the acre and filled with what is known to the trade as slop distillate from which the asphaltum base and soot elements have been extracted. This distillate may be had in unlimited quantities in Southern California at a figure somewhat less than the cost of the commonest crude oil.

The heater is of simple design, made to nest solid, occupying but little room in the orchard or in storage as shown by the fact that an ordinary box car will hold 30,000 of them.

With this system the small grower can protect an isolated acreage with ease and certainty, as well as can the larger grower, having full control of his heat at all times within the limits of his own ground.

These heaters require no attention from the time they are fired until the fuel is entirely consumed, covering a period of about seven hours.

The average cost of protection under this system should not exceed $5 an acre for a period of six years. With ordinary care these heaters should last eight or ten years. They can be had in Los Angeles or San Francisco, the price laid down to the grower being $20 per 100 heaters, and the Electric Frost Alarm Thermometer similarly lai[illegible] down for $22.50.—J. P. Bolton, Fresno.

The demonstration of the Frost Protection Company using slop disti[illegible] for fuel, which was made at P[illegible] last week, is reported to have b[illegible] complete success. The fuel pots we[illegible] filled and fired at 6:20 p. m. Without special effort 100 of them were lighted in five minutes. The pots burned without refilling until 1:45 a. m. The soot arrester was declared to be perfect in operation and no smutting of fruit was observed. The cost of this admirable process is represented to be 2¼ cents per night for each of the fuel pots.

EVERY DRUG STORE SELLS IT.

A very trivial thing oftentimes causes a horse to go lame, such as a slight wrench, a sprain, a cut, etc. These are things that are to be expected. They are liable to happen to any horse at any time. The lameness may cause inconvenience, but it is not otherwise serious. All that is necessary in many such cases is to be ready to treat promptly with some efficient remedy.

Almost everybody who owns a horse has heard of Kendall's Spavin Cure. Its popularity has not been confined to one locality or state. It is national, even world-wide. It is found on the shelves of well posted horse owners in many countries.

It is worth while to remember that Kendall's Spavin Cure has been in use for nearly half a century and its popularity is greater now than ever before. If it had not stood the test it would have been out of mind long ago.

This old favorite horse liniment is on sale at drug stores everywhere. The excellent horse book entitled, "A Treatise on the Horse and His Diseases," can also be had free at drug stores or by writing for it to the publishers, the Dr. B. J. Kendall Co., at Enosburg Falls, Vermont.

IMPROVED TRANSPORTATION METHODS.

The price paid for farm produce is determined largely by its condition when delivered to the consumer. The question of transportation was a very serious one a decade ago, inasmuch as the roughly constructed vehicles which were then used to transport perishable goods to the market were the cause of such a large shrinkage.

The farm wagon is one of the oldest and most necessary vehicles in existence. Its greatest improvement during the last twenty years has been in the addition of bolster springs, which make it practically a spring wagon.

Farmers interested in securing better prices for their produce should drop a card to the Harvey Spring Company, 737 Seventeenth Street, Racine, Wis., and ask for the catalog and particulars regarding free trial offer.

Queries and Replies

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Trouble with Heifer.

I would like to have your suggestion as to what to do with my Jersey calf. I bought her in July last year and was told she was with calf. I let her run again in November as the promised calf did not come in October. Now in May she has started to give milk again, four quarts a day, very rich milk too, but there is no sign of her looking as if she was going to have a calf. She is three years old and never had a calf before I got her.—Subscriber.

It is probable the cow aborted and freshened in that way.

Bermuda Grass.

I send specimen of grass. Please give me its name and how to eradicate it.—Subscriber, Oakland.

The grass in the letter was a good lusty specimen of Bermuda, joint [illegible]ss, devil grass, or any other dia[illegible]al name which may be applied [illegible]. The naming of it is easy, but how to eradicate it is another matter. Clean culture, of course, will accomplish it, and in the orchard or garden such culture as should be given will keep it entirely out of the ground, but in the lawn or in alfalfa about the only remedy is to give a year or two of clean culture.

Sago Palm—Canariensis.

Can you advise me as to care of the sago palm, also the date "not of commerce?" I have four of these over twelve feet in circumference. Can one grow vines in their limbs?—C. N. Ambrose, Palm Knoll, Escondido.

The Cycad commonly called Sago palm will grow in open sunlight, but should have fertile soil and must not be stinted in watering. Some gardeners prefer to grow it in partial shade.

No special care is needed for the dates, which doubtless are Phoenix Canariensis, except plenty of water and fertilizer, if a rapid growth and fine rich colored foliage is wanted. It is possible to grow vines and ferns in the stubs, but the almost ceaseless attention needed in our arid atmosphere renders it hardly worth the effort—especially back from the Coast. A better way is to plant ivy (English) or Ivy Geranium around the base of the tree and they will climb the trunk of their own accord and they are easily watered.

To have ferns or vines grow in the stubs it will be necessary to pack the spaces with a mixture of soil and sphagnum (moss) and plant in that. This can be kept in place by fine copper wire and the moss will not only hold the soil, but retain moisture longer than almost any other material. —Q. A. L.

Squash Bugs.

I enclose what we call pumpkin bugs. They are causing me much trouble. What will eradicate them?—C. L. T., Visalia.

The bugs sent were genuine squash bugs. Circular 39 of the U. S. Dep't Agriculture, Division of Entomology gives more particular information, and from this we take the following method of control:

"Hand-picking early in the season.—A lookout should be kept for the bugs early in the season and these as well as the eggs should be picked off or cut away with shears and destroyed. The eggs, on account of their large and conspicuous appearance when deposited in clusters while the vines are young, are readily seen, and the grower should make a practice at the beginning of each season of going over the vines every few days. Such young as may hatch in spite of these precautions may be killed by kerosene emulsion if applied upon their first appearance.

"Trapping the bugs.—The bugs may also be trapped by placing about at intervals on the ground through the garden, boards, shingles, pieces of bark, or similar material, to which the insects will be attracted for shelter. Here they should be looked for and destroyed every morning or so during the early season.

"Protection to cucurbits other than squash, and perhaps pumpkin, can be secured by growing these plants with the others to serve as trap crops. Attack will thus be centered upon a few plants where the insects can be the more readily controlled.

"Other methods.—A number of the remedies in use against the striped cucumber beetle and other insect enemies of cucurbits will assist in the destruction or control of this species. Among these are the protection of the young plants with coverings, the use of repellants such as land plaster or gypsum saturated with kerosene or turpentine, the planting of an excess of seed to distribute attack, the stimulation of the growth of the plant by manures and other proper fertilizer, and lastly, clean cultural practice. If the precaution be taken to gather the vines as soon as the crop is harvested and burn them, many bugs in their different stages will be destroyed and the crop of insects will be reduced for the ensuing year."

Asparagus.

Can you tell me where to obtain asparagus plants and which kind is the best and when is the best time to plant same?—C. N. Ambrose, Palm Knoll, Escondido.

Almost any nurseryman or seedsman can furnish asparagus plants. I know of no better variety than Dreer's Eclipse, but any of the leading varieties will produce good asparagus if the culture is good. February or March is best time to plant.—Q. A. L.

Watermelon Query.

What is the best way to plant watermelon seed so it will be sure to come up? Many of my plants wither as soon as they are up, and it looks as if something had eaten the stalk off the root. What is the cause and how can it be prevented?—S. B., Chico.

If the soil is in good mellow condition, and not too dry, and the seed good, there should be no trouble in having them come up. Do not cover too deeply. I usually cover about half an inch and then put a light mulch over that of light well decayed manure or old planing mill shavings. This prevents the soil from baking. It is impossible to tell from the querist's data just what is eating off the plants or what causes them to wither. If they are not cut entirely off, but seem decayed just at the surface, it may be caused by a borer that often works in the heart of the young plant, or by a fungus which produces that condition we call "damping off." —I know of no practical remedy.—Q. A. L.

(Continued on Page 71.)

FREDERICK C. ROEDING PASSES INTO THE NIGHT.

In the death of Frederick Christian Roeding, which occurred in San Francisco on the evening of July 17, there passed into the Beyond another of that gallant band of early Californians who builded an empire with commercial horticulture as its basic foundation. His death was not wholly unexpected, as oncoming age testified to its progress in the fact that he had passed his eighty-seventh birthday.

At his bedside when the spirit left its abode were his two sons, Henry and Frederick, and Mrs. Roeding; his son George, of the Fancher Creek Nurseries, happened to be away on business in Portland, Oregon, but he was at once informed and hurried to San Francisco.

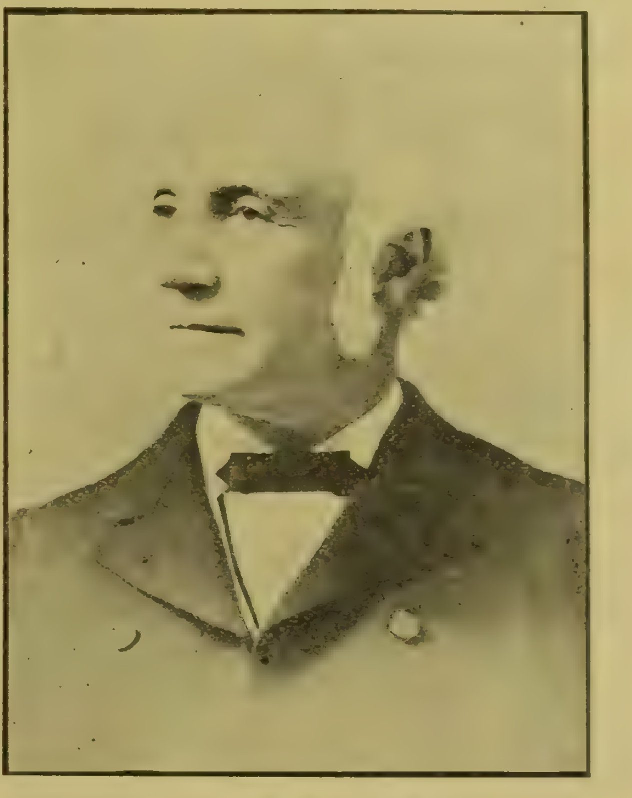
From a short sketch of his career appearing in the Fresno Herald, the Cultivator gleans the following facts touching on his agricultural interests:

"Mr. Roeding was one of the pioneers of California. He came to San Francisco in the early days and was one of the founders of the German Savings and Loan Society of that city, of which institution he was cashier for many years. In the '70's he came to Fresno as a member of a German syndicate and took up vast parcels of land, among these being the site upon which the city of Fresno now stands.

"Later the syndicate divided the land among its various members, Roeding receiving as his share most of the land now occupied by this city and also large holdings to the west. among these being the Eisen and Sunnyside vineyards and Calmyrna and Temperance colonies. Gradually the town property was disposed of until now his only city holdings consist of five lots in the 1200 block on J street. Three of these lots are occupied by the Fancher Creek Nurseries' city agency, of which his son George C. Roeding, is the head.

"Roeding Park will always stand in Fresno as a monument to the deceased capitalist. This park, which is considered one of the best in the interior of the state, was donated by the deceased to the city. It consists of 117 acres, all of which was received by Fresno free of all encumbranches."

Possibly the chief event associated with the name of Roeding connects it with fig culture in this state. As early as 1886 the elder Roeding was planting this fruit in Fresno county, and in the same year founded the Fancher Creek Nurseries. In its earlier development the fig business was more or less precarious, until 1897, when his son, George C., was largely instrumental in introducing and establishing the fig wasp, Blastophaga grossorum, and fig culture became at once one of the great horticultural assets of Central California.



Frederick Christian Roeding.

TWICE VALUABLE.

The writer has found by analysis that lemon blossoms and geranium flowers (the large red variety,) contain practically the same percentage of phosphoric acid in the ash, and the percentage is large. The lemon blossom, however, contains much the larger percentage of ash.

This is probably why an abundance of superphosphate or some other supply of available prosphoric acid is so necessary for fruit trees at and before blooming time.

While phosphoric acid is needed for producing a profusion of flowers, nitrate is the chief agent of growth, and has the effect of making large and magnificent flowers of all kinds.

Nitrate of soda also possesses decided insecticide powers, which seems to be confirmed by the experience of a Redlands greenhouse man. He says in a communication to the Times: "Not only did it prove a valuable fertilizer, but it either destroyed or drove away an army of wire worms with which my greenhouse had long been infested, and for which I had tried many exterminators."—R. R. Snowden, Chemist and Soil Engineer.

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Household Department

THE HOMESTEADER'S FAREWELL

Farewell to my homestead shanty;
  I've made my final proof;
The cattle will hook down the wall,
  And some one will steal off the roof.

Farewell to my sheet iron stove,
  It stands in the corner all cold;
The good things I've baked in its oven
  In language can never be told.

Farewell to my nice little table,
  Whereunder I've oft put my feet,
And chose from the bounty of good things
  The substantials of life for to eat.

Farewell to my cracker-box cupboard,
  With a gunnysack for a door.
Farewell to my store of good things,
  That I never shall want any more.

Farewell to my downholstered chair,
  With its bottom all sagged to the ground;
Farewell to socks, shirts and breeches
  That filled it again to the round.

Farewell to my little pine bedstead,
  'Tis on thee I've slumbered and slept;
Farewell to the dreams that I dreamt,
  While the centipedes over me crept.

Farewell to my tea and my crackers,
  Farewell to my sorghum and buckwheat,
Farewell to my lalakadope.

Farewell to my sour dough pancakes,
  That none but myself could endure;
If they didn't taste good to a stranger,
  They were sure the dyspeptic to cure.

Farewell to my entire homestead;
  Farewell to your hills and your sand;
I've covered you up with a mortgage,
  Farewell to my quarter of land.
—Unknown.

SPEAKING OF HATS.

MOST persons," said the peevish girl, "can remember the time when a hat was merely a hat. Since it was just a covering for the head nobody paid much attention to it and the head itself was the main thing. That time has gone—gone forever, I fear.

"Nowadays—well, no one has time nowadays to stop to consider anything because if one does not have to rush to catch a train one has to hurry to escape being late for a dinner party or to keep one's appointment at the dressmaker's. Still, if a person were laid up with a broken leg, say, or something calming of that sort and really dwelt upon the subject it readily could be realized that hats have become a far different matter.

"I know a tiny hat store that is about as big as a minute," went on the peevish girl. "It looks entirely harmless and subdued. It is exclusive, certainly. Nobody wants to buy a hat anywhere but at an exclusive place. While on an exploring trip recently I found my way into this little hat shop. I had a defiant expression in my eye because I had resolved that if the usual languid and gorgeous person in black floated up and asked the usual $40 or $50 for a head covering worth almost $10 I should icily refuse to be robbed and walk out. Still, I wanted to see what there was in the shop.

"I saw before me a small, three-cornered hat of black velvet, utterly unadorned save for a bunch of feathery aigrettes on the side. I glanced inquiringly at the gorgeous person who was surveying me as though at last she was gazing upon the murderer of her beloved grandmother.

"'That?' echoed the gorgeous person. 'That little chapeau is—let me see—it is $115.' She brushed a speck of dust from her shoulder as she finished.

"'Buy why?' I asked her when the room had stopped whirling around. I had not meant to betray surprise at anything in the hat shop, but human flesh and blood could not stand this sledge-hammer blow.

"The gorgeous person regarded me with extreme dislike. 'Those are aigrettes on it,' she murmured, indifferently.

"'Oh, yes—aigrettes," I repeated. 'To be sure. But excuse me— do you mean to say there are women in the world who actually hand over $100 or so for a thing that hasn't any more to show for it than that?'

"Then while the gorgeous person showed signs of apoplexy I made my escape. On the street I watched the hats. If I saw a particularly plain, unnoticeable one I knew it had cost enough to support a family for a month. All the faces beneath the hats were harassed and tense as the owners flew along. The owners either were on their way to buy more hats or had just escaped from the clutches of gorgeous persons in hat shops.

"You know," explained the peevish girl, "you are always buying hats nowadays because one for best and one for every day simply will not do at all. Neither ever is just the thing for the gown you want to wear, and you end by buying a hat when you buy dress goods just as much as you order the hooks and eyes and trimmings.

"As for plumes—all the ostriches on earth must be going around these days in a terrifically decollete state, for there are enough feathers at large in Chicago alone at the present moment to clothe decently all the ostriches that were ever created. To see them in their full and impudent glory step into any fashionable cafe after the theater.

"'No, I'm not ill or anything," I said to my escort the other night, 'but I haven't time to eat. I'm counting. Why, willow plumes, of course. There's a gray one back of you a yard long that never cost a cent under $75. And look at that white hat with three plumes—I suppose there is a girl concealed under it somewhere—and over there see those heliotrope ones. That heliotrope hat certainly set back father's bank account $150 at least. And there are bushels of black feathers $50 apiece. Why, I can't see anything but a sea of yellow plumes! It isn't a cafe—it's just a forest of hats with people lost in the shadows underneath paying checks for food they haven't time to eat because every living girl is looking to see if anyone has a willow plume handsomer than hers!'

"The reason the milliners ask and get about 500 per cent on their investment is perfectly plain," declared the peevish girl. "It is all the fault of feminine creatures like one I saw in a store not long ago. While wandering around in the millinery department this woman pounced with a little cry of joy upon a hat in a case. She put it on and positively cooed with rapture.

"'Why,' she told the attending clerk, 'if I had looked for a week I never could have found anything so precisely what I wanted. It's exactly what I had in mind! It just finishes off my suit. Look how well they go together. How much is it?'

"'It's marked $12,' said the clerk.

"The jubilant customer stared. 'Take it away!' she cried. 'Only $12! There must be something wrong with it! Everybody I know would say I was wearing a cheap hat! No, I don't want it! There's nothing here that will suit me!'

"If one could catch and suppress all the women like that maybe one could ask the price of a hat nowadays without clutching a bottle of smelling salts firmly in one hand!" ended the peevish girl.—Universal Magazine.

USEFUL IN THE KITCHEN.

There is nothing more useful in the kitchen than some abestos mats and these can be bought for a trifle, or you can buy the asbestos and make the mats any shape or size you want. The small mats are especially useful to save scorched food if you have no double boiler, as one can be used when heating the milk for toast and one can be placed under the pan when cooking oatmeal or custard. Place a good sized asbestos mat around the front of the stove on the floor to prevent any danger of coals falling from the stove and burning holes in the floor or floor covering. It is a good plan to have small boards or sheets of heavy paper ready to place on the table on which to set a hot sauce pan or kettle and thus protect the table. These can be kept out of sight when not in use.

Another good plan is to keep an old soft cloth hanging in a convenient place ready for drying the hands. There is nothing better for this purpose than pieces of old knit underwear, as they are soft and easily washed and they are a great saving to the kitchen towel.

To keep your dishes shining with very little work, wipe them out clean with bits of soft cloth or paper, then put as many in the dish pan as it will hold without crowding, sprinkle enough pearline through them to make a good suds, then pour enough hot water over your dishes to cover them and let them stand while you attend to some other work. When ready to wash the dishes, have a pan of clean hot water ready, run a dish mop through the dishes in the pan, put them in the clear water and dry with one clean towel and polish with another and the dish washing is done in a few minutes. This suds is excellent for washing fine china and glass, but these pieces should be washed separately and as quickly as possible. Sal soda added to the suds for scrubbing tables and floors makes them white and saves labor, and tinware may be kept shining by dipping a damp cloth in soda and then rubbing the tin and polishing with a soft, dry cloth, and this is a good way to brighten china dishes when they have become dark or discolored.—Martha.

SOME OF NATURE'S REMEDIES.

An excellent remedy for wounds from rusty nails, hay forks, or other such accidents is made by bruising peach tree leaves and binding over the wound, changing them every three or four hours until all soreness is gone; and there is nothing better for a sprain than bruised peach leaves bound securely over the member that is wounded. An excellent remedy for a bee sting is made by crushing a plantain leaf and binding over the sting. A remedy that is said to be fine for asthma is made by gathering about six double handfuls of peach tree leaves, boiling them, then squeezing the juice out—there should be about one quart. Add this to one quart of good molasses and cook to a candy, then pull and cut into small pieces and take a piece five or six times a day.

To keep water bugs out of the house, soak cucumber peelings in water, and at night-fall, scatter them about the pipes and drains.

A good cucumber cream is fine for the complexion and it is easily made. Slice a ripe cucumber, peel and all in a bowl, then cover with fresh sweet milk and let stand for half a day, strain and bottle. Wash the face and hands at night in warm suds and soften the water by adding a little borax, then rinse the suds off with cold water softened with a little borax, as hard water will ruin the skin, and after drying the skin with a soft towel, apply the cucumber lotion to the face and hands with a soft cloth and let it dry on the skin. Mutton tallow melted and softened by adding oil and borax, well rubbed over the face before going out in the wind and sun, will prevent the skin from tanning and burning.

To make an excellent remedy for salt rheum, slice pokeberry root and fry it in lard, and rub on the hands three or four times a day. A good remedy for poison oak is made by mixing equal parts of quinine and lard and applying to the affected parts. To make a good remedy for perspiration, get one pound of oak bark and steep for half an hour in two quarts of boiling water, then strain and bottle and add two teaspoonfuls each of powdered starch and borax and half a cupful of the lotion to a basin of water is about right.—M. H.

MEAT COOKED WITH VINEGAR.

Dishes in which vinegar is used to give flavor as well as to soften the meat and make it tender, are the following:

Sour Beef.

Take a piece of beef from the rump or the lower round, cover with vinegar or with a half-and-half mixture of vinegar and water, add sliced onion, bay leaves, and a few mixed whole spices and salt. Allow to stand a week in winter or three or four days in summer; turn once a day and keep covered. When ready to cook, brown the meat in fat, using an enameled iron pan, strain the liquid over it and cook until tender; thicken the gravy with flour or ginger snaps (which may be broken up first), strain it, and pour over the sliced meat. Some cooks add cream.

Sour Beefsteak.

Round steak may be cooked in water in which there is a little vinegar, or if the time is sufficient, it may be soaked for a few hours in vinegar and water and then cooked in a casserole or in some similar way.

SWEET PICKLES.

A lady writing to the Rural New Yorker says that the first of the following recipes is the "very best for sweet pickles I ever saw."

Put cucumbers in cold weak brine (½ cup salt to one gallon of water) for 24 hours. Take out and dry on cloth. To one gallon vinegar add two cups of sugar and nearly one ounce of mixed spice, heat boiling hot. Put in pickles and let boil up once. Put in cans immediately, and pour hot vinegar over them; seal up. They keep well, and are very nice.

Another recipe is as follows: Let the cucumbers stand in salt water three days. Heat the brine once or twice and pour over them. Drain; put in a jar and pour over them hot vinegar with cloves and cinnamon in a bag; two-thirds cupful sugar to quart of vinegar; put in plenty of horseradish and this will keep sealed or open. Put in a little alum t make them brittle.

GIRLS, READ THIS.

There is nothing so pretty in the manner of a young girl as courtesy towards the aged. It may be pleasanter to turn and listen to the giddy remark of some girl of your own age rather than to that of some elderly woman, but it does not put your disposition in anything like so becoming a light. Do not neglect the elderly guest in your home. If you only knew how much the delicate attentions of youth particularly are appreiated by age you would be no niggard in bestowing them. You will, too, always be the gainer by such thoughtfulness, the gainer in wisdom, love, and, above all, that greatest attraction in a girl's disposition, unselfishness.

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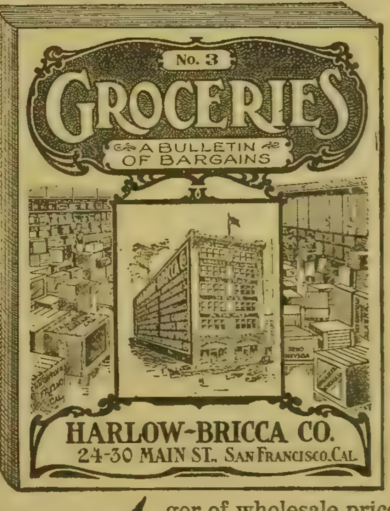

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San Francisco and Los Angeles Produce Markets

Los Angeles Markets

LOS ANGELES, July 20, 1910.

Butter.

The lower grades of butter are slightly lower with good demand and firm market.

Price to trade 2½c in advance of the following Produce Exchange quotations:

Extras	.31½
Firsts	.29½
Cooking	.26

Cheese.

Northern fresh	.17
Anchor, large	.18
Oregon Daisy	.18½@19
Imported Swiss	.30
Domestic Swiss	.22@23

Eggs and Poultry.

Eggs are advancing slowly. This week shows a 2-cent advance both in case counts and extras. Market very firm.

Paying price f. o. b. L. A. is:

Local ranch candled	.35
Case count buying price	.31
Eastern fresh	.28
Eastern storage	.26

Dealers pay for live poultry f. o. b. L. A.:

Hens, per lb	.15@17
Roosters	.9
Broilers	.16@17
Turkeys	.22@24
Geese	.12
Ducks	.14¼
Pigeons, doz.	.75

Live Stock.

The following quotations are f. o. b. Los Angeles, on all stock:

Hogs, 175 to 200 lbs	.10¼
Prime Steers	.5
Heifers	.4@4½
Calves, per lb	.5½
Sheep ewes, per head, shorn	4.00@4.50
Lambs, per head	3.50
Wethers, shorn	4.00@4.50

Potatoes.

Wholesale prices are:

New potatoes, per ctl.	1.25
Sweets, Yellow, per lb.	.5@7

Onions.

Wholesale quotations:

Silver Skin, per box	.90
Yellow Danvers	2.50
Garlic	.8

Vegetables.

Wholesale quotations:

Asparagus	.10@12
Artichokes, northern, doz.	.85
Beets, sack	.90
Beans, green and wax	.3@5
Beans, Limas	.8
Brussels Sprouts	.10
Bell Peppers	.8@10
Green Chilis	.10@12
Cabbage, per sack	1.25
Cucumbers, per box	.20@40
Celery, doz.	.90@1.10
Cauliflower, per doz.	1.25
Carrots, per sack	.90
Cream Squash, per lug bx	1.00
Egg Plant, per lb	.6
Endive, doz.	.40
Green Corn, box	.25@35
Green Onions, per doz. bunches	.25@30
Horseradish, per lb	.25
Lettuce, choice, per crate	1.00
Leeks, per doz.	.20
Okra, lb	.8@10
Peas, per lb.	.6
Parsley, per doz. bunches	.20@25
Parsnips, doz. bunches	.15@20
Radishes, per dozen bunches	.10@15
Rhubarb, strawberry	1.25@1.50
Rhubarb, crimson winter	.75
Spinach, per dozen	.20
Summer Squash	.25@40
Turnips, sack	.90
Tomatoes, box	.25@40
Water cress, doz. bunches	.25@35

Citrus Fruits.

Valencias	3.00@4.00
Grapefruit	2.00@3.00
Lemons	4.00@5.00

Fresh Fruits.

Wholesale prices on the market are:

Apricots, per box	1.00@1.10
Alligator Pears, per doz.	4.00@5.00
Apples, New	1.85
Apples, W. Astrachan	1.75
Alexander, lug	1.75
Crabapples, lug	1.25
Cantaloupes, ponies	1.00@1.25
Cantaloupes, standard	1.25@1.35
Cantaloupes, Jumbo	1.00@1.25
Figs, box	.75
Grapes, crate	1.00@1.25
Pears, lug	1.00@1.25
Strawberries	.4@5
Raspberries	.6
Blackberries	.6@7
Pineapples	.6@7
Logans	.7@8
Nectarines	1.50
Peaches, box	.75@1.00
Plums, box	.50@1.10
Prunes, box	1.25
Watermelons, lb.	1½@2

Dried Fruits.

Wholesale prices are:

Apricots	.12
Evap. apples, fy, per lb	.8½
Peaches	.5½@7½
Pears	.12
Nectarines	.10
Prunes	.4@10
Plums	.12

Beans Dried.

Wholesale quotations:

Limas, per ctl.	4.75
Pink, No. 1	7.25
Black eyes	6.50
Lady Washington	4.50@5.00
Small white	4.75
Garvanzas	4.50
Bayous	6.50
Lentils	7.00

Nuts.

Wholesale quotations are:

No. 1 soft shell walnuts	.15
No. 2 soft shell	.10
Walnuts, budded	.16
Almonds, IXL, per lb	.17
Pecans, polished	.14@16
Peanuts, Eastern	.7¼@7½
Peanuts, Cal.	.5@6

Honey.

Wholesale quotations:

Extracted water white	.8½
Extracted light amber	.7
Amber comb	.18
Beeswax	.30

Hay.

Buying prices f. o. b. cars L. A. are:

Barley hay	10.00@12.00
Alfalfa	10.00@12.00
Wheat hay	10.00@12.00
Tame oat	11.00@13.00

Grain.

Wholesale selling price f. o. b. Los Angeles:

Wheat, new per ctl.	1.80@1.85
Kaffir corn	1.75
Corn	1.80
Popcorn, ctl.	3.00@3.45
Egyptian corn	1.80
White oats	1.85
Seed Rye	2.10
Seed Barley	1.35

Feed Stuff

Wholesale selling price f.. o. b., Los Angeles:

Cracked Corn	1.85
Cracked Wheat	1.95
Shorts	1.90
Bran	1.45
Oil cake meal	2.75
Feed Meal	1.90
Rolled Barley	1.35

San Francisco Markets

SAN FRANCISCO, July 19, 1910.

Butter.

Butter market steady, though in large supply. Firsts have advanced slightly.

The official quotations of the San Francisco Wholesale Dairy Produce Exchange for today are as follows:

California extras, per lb	.29
California firsts	.28½
California seconds	.27

Cheese.

California flats, new	.12½@14½
Cal. Young American fy new	.15@16

Eggs and Poultry.

Eggs adavnced on last Tuesday and the market is exceptionally firm. All offerings picked up quickly.

Official quotations of the S. F. Wholesale Dairy & Produce Ex. are;

Fresh ranch extras	.29½
Firsts	.27
Seconds	.23
Thirds	.20
Hens, per doz.	5.00@10.00
Roosters, per doz.	5.00@10.00
Fryers, per doz.	5.00@6.00
Broilers	2.25@350
Geese	2.00@2.50
Ducks	4.50@7.50
Pigeons	1.50@2.25
Squabs	2.50@2.75
Belgian Hares, per doz.	3.50@6.00

Live Stock.

San Francisco prices gross weight:

Steers	.3½@5
Cows and heifers	.2½@4
Hogs	.6@9¾
Calves per lb	.4½@6
Milk Lambs, unshorn	.6@6¼
Wethers No. 1	.5
Ewes No. 1	.4½

Potatoes.

Wholesale market quotations:

River White, new, box	.60@85
Garnet Chile, ctl.	.90@1.15

Vegetables.

Wholesale quotations:

Artichokes	.35@40
Asparagus, per box	.50@1.75
Beans, string, per lb.	.1½@2
Beans, Wax	.2@3
Beans, Limas, lb	.8@10
Cucumbers, box	.40@65
Celery, per crate	.90@1.50
Chili Peppers, per box	.40@60
Bell Peppers	.6@7
Green Corn, sk	1.50@2.50
Egg Plant, per box	.60@85
Lettuce, per crate	4.50@5.00
Okra, box	.60@85
Peas, per lb.	.1@3
Rhubarb, box	.50@75
Summer Squash, box 25 lbs	.25@50
Tomatoes	.50@75
Garlic	.2½@4

Onions.

New Red, sk	1.75@2.00
Yellow, ctl.	1.75@1.90
Silverskins	1.90@2.00

Citrus Fruits.

Valencias	2.00@4.00
Grapefruit	1.50@3.50
Lemons	3.00@6.00
Limes	6.00@6.50

Fresh Fruits.

Apricots, crate	.50@65
Apples, new, box	.35@1.25
Apples, Gravensteins	1.25@1.40
Newtowns	1.25@1.75
Crabapples	.40@60
Apricots crate	.60@75
Cherries	.85@1.10
Cantaloupes, ponies	1.75@2.00
Cantaloupes, Jumbos and st.	2.00@2.50
Cantaloupes, rivers	1.25@1.75
Figs, box	.75@1.25
Grapes, seedless	1.00@1.25
Grapes, Fontainbleau, crate	.75@90
Grapes, Malagas	.75@90
Grapes, Muscat	.90@1.00
Huckleberries, lb.	.12½@15
Pears, large boxes	.50@1.25
Bartletts, wrapped	1.25@1.75
Peaches, box	.35@50
Nectarines, red	.90@1.00
Nectarines, white	.65@85
Plums, box	.25@50
Tragedy Prunes, box	.60@75
Blackberries	3.00@4.50
Raspberries, chest	5.00@7.00
Strawberries, Longw., chst.	3.00@4.00
Strawberries, Malindas	3.00@5.00
Strawberries, Banner	5.00@6.00
Logans, chest	4.00@6.00
Pineapples, doz.	2.50@3.00
Watermelons, per doz.	2.00@3.00

Dried Fruits.

Santa Clara prunes	.3¼@3½
1 cent premium for larger sizes.	
Apricots per lb. Royal	.9@10
Peaches	.5@5½
Apples, evap.	.7½@7¾
Pears	.5@7½
Figs	.3¾@5
Nectarines	.5@6
Plums	.7@8

Futures on 1910—Apricots, 7@10; Peaches, 5@6; Prunes, Santa Claras, 3¾@4¼, 1 cent premium.

RAISINS—1909 crop, f. o. b.; fancy seeded, 16-oz. cartons, 5@5¼c; do, 12-oz., 4½c; do, choice, 16-oz., 4½@4¾c; choice. 12-oz., 4c; 50-lb. boxes loose Muscatels, standard, 4-crown, 4@4½c; 3-crown, 3¼@3½c; 2-crown, 2½@3c; seedless Thompson, unbleached, 3c; do, bleached, 5@6c; Sultanas, unbleached, 2¼c; do, bleached, 4@4½c; Muscatels, unbleached, 2¼c; London layers, clusters, 2-crown, 85@90c; 3-crown 90c@$1; 4-crown, $1.30@1.50; 5-crown, $1.75@2; 6-crown, $2@2.50.

Nuts.

Walnuts S S No 1	.13@13½
Walnuts, hard shell	.13
Almonds '09 N P U	.13
Almonds '09 Nonp	.14½
Almonds I X L	.14
Pecans	.15@17
Chestnuts	.14@15
Peanuts	.5@6½

Beans Dried.

Limas	4.50@4.60
Pink	6.20@6.30
Black eyes	5.60@5.75
Small white	4.00@4.15
Large white	3.90@4.00
Kidneys	5.75@5.85
Garvanzas	2.85@3.00
Bayo	6.50@6.60
Horse beans	1.50@1.75
Cranberry	4.50@4.75
Red Mexicans	5.90@6.10

Hops

Hops, 1909 crop	.11@14
Hops, 1908 crop	.9@11

1910 contracts now being made at 12@15 cents.

Honey.

White comb	.14@15
Amber	.10@12
Extracted W W	.7½
Extracted light amber	.6½@7
Beeswax, per lb	.25@29

Hay.

Scott, Magner & Miller report:

Arrivals of hay for the past six days have been 3000 tons. This amount shows a decrease from the preceding week.

Operations in the country for the current week show a lack of any activity, and in many of our hay sections no hay to speak of has moved from the hay fields, but is piled up and awaiting buyers. Export trade and coastwise shipments have been light. A little fancy lightweight wheat hay commands our topmost quotations. The bulk of the wheat hay that is being sold here at the present time has been wholesaled at from $10.00 to $11.50 per ton. A choice article in red oat hay is also in favor.

Arrivals of alfalfa hay have been very light, and our market here is carrying very little of this type of hay at the present time. We anticipate an active demand to commence shortly, as the question of purchases for winter necessities must soon be taken up.

Fancy wheat	13.00@13.50
No. 1 wheat or wh and o.	.11.00@12.00
No. 2 wheat or wh and o.	..9.00@10.00
Choice tame oat	11.00@12.00
Other tame oat	8.00@10.00
Wild oat	7.50@9.50
Stock hay	5.00@6.0
Alfalfa	6.50@10.00
Straw	.40@55

Grain.

Wheat No. 1	1.60@1.65
Barley, common	1.05@1.10
Barley, fancy	1.11¼
Oats, white	1.42½@1.47½
Rye, new crop	1.50@1.60
Corn, large yellow	1.55@1.60
Alfalfa seed	.16@18
Mustard brown	.3¾@4¼
Millet	.2½@3
Flaxseed	.4½@5
Broom corn seed, per ton	23.50

Feed Stuff

Bran, per ton	22.00@23.00
Feed cornmeal, per ton	34.00@35.00
Cracked corn	34.00@35.00
Ground barley, per ton	21.50@22.50
Rolled oats, per ton	28.00@29.00
Middlings	30.00@31.00
Oil cake, per ton	38.50@40.00
Cocoanut cake per ton	25.00
Mixed feed, per ton	24.00@30.00
Shorts	23.00@24.00

Deciduous Market

SACRAMENTO, July 16, 1910.

The California Fruit Distributors reports:

The following gives number of cars of deciduous fruit shipped from all points in California for the week (7 days) ending Friday morning. July 15, 1910.

Peaches.

One hundred and twenty-three and three-fourths cars. Demand for peaches during the past week has been exceptionally good, considering the large quantities of southern peaches now being received in Eastern markets. Early Crawfords are now practically finished and a very satisfactory crop of late Crawfords, Susquehannas and Elbertas is now available. In clings we have Tuscan to offer. The bulk of the peach offerings of this state will be made during the next two weeks, after which time supplies will materially decrease. Quality of the fruit is first class.

Plums.

One hundred and ninety-eight cars: Giant, Diamond, Wickson, California Red, Sugar, Gros, Kelsey, German, Fellenberg, Quackenboss, Imperial and Grand Duke plums will be available in comparatively limited quantities during the coming week. Heavy movement of plums is now over.

Pears.

Two hundred and ninety-one and a half cars. As will be noted, there is a heavy increase in the movement of this fruit since our last report. Pear shipments, however, have now passed their zenith and will decline from this time on. Canners are now in the market taking liberal supplies at good prices, which will certainly interfere with the free movement of this variety for Eastern shipment. The heavy movement from the River will be followed by liberal shipments from Suisun and Vacaville, which may be expected to continue during the netx two or three weeks.

Grapes.

Five and three-fourths cars. Some Fontainbleau from the early sections, and a few cars of Thompson Seedless from the Fresno district, are now going forward. Shipment of this variety may be expected to increase from day to day, and next week should see a free movement. The fruit is of unusually good quality. Tokays are now coming along in fine shape and promise to be considerably better than usual. There will be no black grapes available until about the 25th.

We are pleased to report that the splendid f. o. b. demand for California fruits mentioned last week has continued, and we have sold unusually large quantities. The season for California tree fruits will be shorter than usual this year, owing to the greater earliness of the season.

Citrus Market

LOS ANGELES, July 20, 1910.

With some Valencias commanding $6.00 and even $7.00, it is feared that the orange market may be injured by stopping the demand, but with the limited number of cars yet to go it is entirely probable that good stiff prices will prevail. At this time the demand for them is almost fierce. Even the auctions show remarkable returns.

Lemons are shading slightly, principally because the weather has not been so favorable for large consumption. The decline is very slight and such as would naturally be effected by weather conditions.

Shipments.

Total shipments of citrus fruits since November 1, 1909: 26,832 cars, of which 23,068 were oranges and 3764 lemons. To same date last year: 33,267 cars, of which 28,298 were oranges and 4967 lemons.

NEW YORK, Monday, July 18.—The car of California lemons advertised for today did not arrive in time to sell. There was a strong and fairly active market for California oranges at auction today and the fancy fruit brought somewhat better prices. On the offerings of average quality, however, there was no quotable improvement. Eleven cars oranges sold. Market steady on good stock, easier on poor fruit. Cloudy, cool.

VALENCIAS—	Avge.
Security	$4.30
Blue Banner, Pioneer F. Co.	3.05
Pride of West, Pioneer F. Co.	2.25
Eagle Head, I. L. Lyons Sons	2.35
Independent, Fy., Growers' F. Co.	4.45
Independent, Ch., Growers' F. Co.	3.20
Stock Label, Growers' F. Co.	2.25
Old Mission, Fy., Chapman	6.75
Old Mission, Ch., Chapman	6.10
Golden Eagle, Sd., Chapman	4.65
Golden Cross, O. K. Exchange	4.85
Butterfly, Covina Exchange	4.70
Teal, Covina Exchange	3.45
Pinto	2.40
Lighthouse, Sd., Randolph F. Co.	2.45
Dahlia, Sd., C. C. U.	2.30
Topaz, Xc, C. C. U.	2.95
SWEETS—	Avge.
Golden Cross, O. K. Exchange	$4.10
Best Yet	1.40
SEEDLINGS—	Avge.
Topaz, Xc., C. C. U.	$2.00
Flamingo, C. C. U.	2.45
ST. MICHAELS—	Avge.
Constitution	$2.30

St. Michaels, halves—Red, X., $1.70. Grapefruit, boxes—Golden Flower, $2.25; Old Mission, Fy., $5.70.

CLEVELAND, Monday, July 18.—One car sweets, 1 mixed car and 1 car lemons sold. Market is lower on lemons, higher on oranges. Very cool.

VALENCIAS—	Avge.
Coyote, O. K. Exchange	$3.15
Pico, S. T. Whittier	2.40
SWEETS—	Avge.
Floral, S. B. Colton	$2.30
Coyote, O. K. Exchange	2.85
Quail, O. K. Exchange	3.60

St. Michaels—Coyote, $2.60. Halves—Quail, $1.60. Lemons—Pet, S. A. Exchange, $6.05.

BOSTON, Monday, July 18.—Three cars sold. Weather cool, cloudy. Market continues strong.

LEMONS—	Avge.
Pet, S. A. Exchnge	$6.80
Greyhound, S. A. Exchange	6.60
RUBY BLOODS—	Avge.
Rey, S. T. Fernando	$2.60
Tunnel, S. T. Fernando	2.10
ST. MICHAELS—	Avge.
Rey, S. T. Fernando	$3.55
Tunnel, S. T. Fernando	2.55
SWEETS—	Avge.
Thoroughbred	2.60

PITTSBURG, Monday, July 18.—Four cars sold. Market steady on oranges and lemons. Weather warm.

VALENCIAS—	Avge.
Pomona, S. A. Exchange	$3.90
Royal Knight, R. H. Redlands	3.75
Newsboy, R. H. Redlnds	3.15
Squirrel, A. H. Prenda	3.10
Green & Gold, S. A. Pomona	3.00
Playmates, R. H. Redlands	3.65
Beauties, R. H. Redlands	3.20
Prairie Chicken, A. H. Prenda	2.30
LEMONS—	Avge.
Pomona, S. A. Exchange	$5.00

ST. LOUIS, Monday, July 18.—Cool. Market firm on good fruit. One mixed car and one car of lemons sold.

LEMONS—	Avge.
Alcazar, A. C. G., Azusa	$5.05
Green Crown, A. C. G., Azusa	4.50

Navels—Owl, O. K. Exchange, $2.55. Sweets—Owl, $2.55. Valencias—Owl, $1.90.

PHILADELPHIA, Monday, July 18.—Two cars Valencias and two mixed sold.

VALENCIAS—	Avge.
Pomona, S. A. Exchange	$2.35
Bunker Hill, Sd., C. C. U.	2.40
Gondolier, Or., C. C. U.	2.95

CINCINNATI, Monday, July 18.—Cool. Market steady. Two cars lemons sold.

LEMONS—	Avge.
Pet, S. A. Exchange	$5.70
Greyhound, S. A. Exchange	4.65
Loma	4.95
Arab, S. A. Exchange	5.60
Duck, S. A. Exchange	4.20

CHICAGO, Monday, July 18.—Lemons are good and remain steady. Boxes, California, choice, $6.00; extra choice, $6.50; common, $5.00.

Oranges, steady; moderate sale and in light supply. Boxes, late Valencias, extra choice, $4.00@4..25; choice, $3.25 @3.75.

BOSTON, Tuesday, July 19.—Eight cars sold. Cool, cloudy. Market strong and higher on oranges; easier lemons.

LEMONS—	Avge.
Southland Beauties, Q. C., Corona	$6.55
Liberty, Escondido F. G. A.	5.25
Laurel, Q. C., Corona	6.70
Justrite, Q. C., Corona	5.55
Foxaway, Escondido F. G. A.	5.35
Princess, Q. C., Corona	6.50
VALENCIAS—	Avge.
Robusta No. 1, A. H. Pachappa	$5.40
Hobo, A. H. Pachappa	3.95
Independent, Ch., Grawers' F. Co.	4.25
Robusta, A. H. Pachappa	5.55
Independent, Fy., Growers' F. Co.	5.45

GRAPEFRUIT—Robusta, $6.10; Alta Cresta, $3.45; Robusta, $3.30. SWEETS—Squirrel, $4.35; Palm Tree, $3.70. ST. MICHAELS—Squirrel, $3.60; Palm Tree, $2.50. HALVES—Squirrel, $1.50.

CHICAGO, Tuesday, July 19.—Lemons are good sale and remain steady. Boxes California choice, $6; extra choice, $6.50; common, $5.

Oranges steady; moderate sale and in light supply. Boxes, late Valencia, extra choice, $4.00@4.25; choice, $3.25@3.75.

PHILADELPHIA, Tuesday, July 19.—Lemons, per box, $4.00@6.00.

APRICOT INFORMATION.

The advantage of co-operation is so great and is so well understood that it is useless to say anything further about it.

The apricot raisers of Orange county have organized a county association which is in a fair way of being a success.

We believe that the benefits we will derive from the association this season will be so plain that associations will be started wherever there is dried fruit for sale, and that finally these local organizations will be combined in a state association, similar to the walnut growers.

When this is done, we will be in a position to secure the best price that the market affords, in fact we will be in a position to a certain extent to make the price ourselves. Just now, what we need, is an accurate knowledge of the extent of the present crop. We need this in order to make a price at which we will sell our fruit for this season. We have made a preliminary price of 10 cents per pound based on such information as we have been able to get.

But we want more accurate information and ask every grower of dried apricots to send us a postal card, answering the following questions:

What county?

How many pounds of dried apricots had you last year?

How many pounds this year?

How does this year's crop compare with last year's in your vicinity?

These questions are few and simple, yet they will be of great benefit to us if answered by every grower who reads this.—A. C. Tiede, Santa Ana, Cal.

Queries

(Continued from Page 67.)

Noxious Weeds in Road.

Touching upon a point raised in recent query in the Cultivator regarding who pays for noxious weed eradication on the highways, we wrote to State Horticultural Commissioner Jeffrey and have from him the following:

"Section 2645 of the Political Code requires noxious weeds to be removed from the public highways by the road overseer at least once a year. This might or might not be done at the proper time to abate a nuisance. For instance, if cockleburs were removed just after the seed was ripened it would not be an attempt at abating the nuisance, hence we must fall back on the county horticultural law which does not limit the eradication to one attempt during the year.

"It is the duty of the Supervisor or his overseer to eradicate or remove weeds, but the law has not made that duty sufficiently strong, consequently we must rely upon the county commissioner, although this, of course, should not prevent the road overseer doing the work when the commissioner demands it. In fact, that is the way it has been done in Los Angeles county by the county commissioner authorizing the Supervisor to have the weeds cut out of the right of way in his district.

"As a legal proposition, there is a point which I cannot settle, namely, whether the county commissioner should serve notice on the abutting property owner, the Supervisor, or the road overseer. I do not think this point has ever been passed upon in the State. If it has, I have never heard of it. This, I assume, is the gist of your inquiry, as you evidently understand the law in all other respects. It would be a curious circumstance should the overseer refuse to abate a weed nuisance; it being abated by the commissioner and the bill brought before the Supervisors for payment out of the general fund as the law requires; the question arising how to make that road district fund pay for the extermination of the weeds as it should. You see what a strange point this would bring up. The law would compel the Supervisors to pay the bill out of the general fund, and I believe the road district fund would escape payment in that way, which would be unfair to the county.

"However, it appears that the abutting property owners are responsible for the condition of the shade trees and other matters relating to their claim upon the right of way on the road,so you see you have asked me a question leading into entirely new lines. The Dept'y Atty. Gen'l was not able to answer it today off hand, and seemed very much puzzled over the case as I presented it. This was before I received your letter, as I had another inquiry regarding the same matter. As soon as I receive an opinion from him I will communicate with you regarding it."

County Commissioner Pease of San Bernardino writes referring to Section 2645 which he thinks is sufficient.

Leaf Cutting Bees.

Mrs. I. A. Newton of Corona, Riverside county, sent in rose and other leaves from which circular pieces had been cut; also small cylindrical cells or cases made of rolled portions of leaves and capped with small round bits of the same size as the holes in the leaves. These cells were apparently the home of the young of some insect. Some of the cylinders contained only pollen or "bee bread." They were sent to Prof. C. F. Baker of Claremont and he writes:

"Sometimes roses are found almost defoliated by neat circular and oblong pieces cut out of the leaves, and here at Claremont I have found many other shrubs attacked in the same way. We are often asked about this very neat and regular cutting of the leaves—the specimens you send are good samples of it. This work is done by certain wild bees called leaf-cutting bees, and if careful watch is kept for a time, one may observe the whole operation. The bees use these pieces of the leaves to build the cells of their nests, using the longer pieces for the sides of the cells and the circular pieces for caps. The cells contain only bee bread and the young larvae, and are placed in burrows in wood, or in pithy plant stems, or in almost any suitable crack or cranny. We have numerous sorts of these interesting bees in Southern California. They rarely cause serious injury, and in my own garden at least are always very welcome visitors."

Self Milkers.

I have cow that milks herself. Is there remedy?—C. T., Blackburn Gulch, Santa Cruz.

We refer our inquirer to Mrs. Sherman's article on this subject in Cultivator of October 28th, 1909.

Littlerock.

Please give information regarding Littlerock, California. Is the land there alkali? Will it grow good alfalfa? What are the drawbacks? Is there plenty of water?—Subscriber.

Littlerock is a small place some miles from the railroad in the Antelope Valley in northern Los Angeles county. It is near the San Bernardino mountains and we presume has water. We will ask our Antelope Valley friends to give us more explicit information.

Veterinary

Answers in this column by Dr. R. T. Whittlesey, are without charge. For immediate mail answer remit $1.00. In writing questions give full symptoms or particulars of injury of animal.

Worms.

My collie pup at times gets so weak and stiff in hind legs it can hardly move. Eats fairly well when he has those spells, but is very thin. Has a short broad white worm. Could that be cause of trouble? Have given him worm powder but without effect.—C. E. U., Hanford.

He probably has tapeworms. It is very difficult to keep a dog from vomiting up worm medicine as fast as you give it to him. You will have better results from salt water enemas. Make as strong with salt as cold water will dissolve. Use a fountain syringe, injecting all he will possibly retain. Tie him so that you can see results. Tape worms are made up of a string of segments about ⅛-inch long. They will come away in a few minutes after enema has been given. Repeat treatment in a week.—R. T. W.

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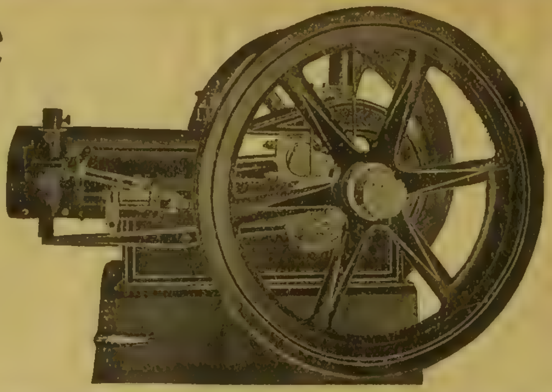

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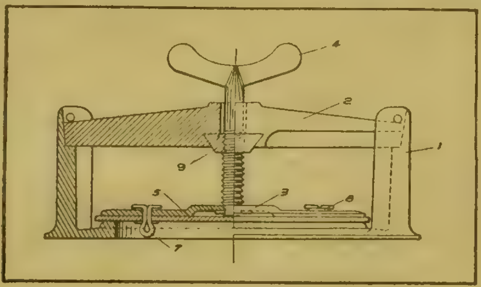

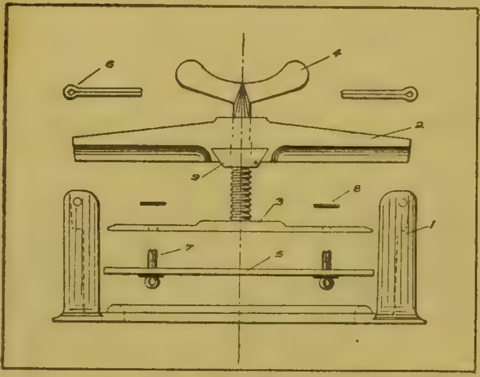

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8 Cotter Pin Washer
9 Brass Nut

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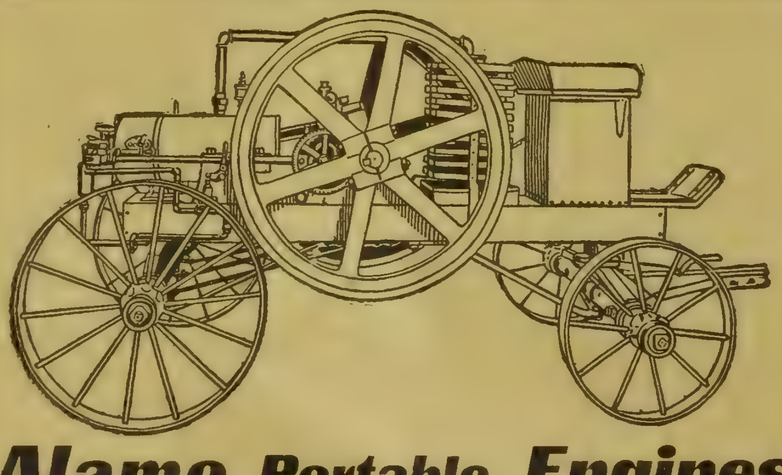

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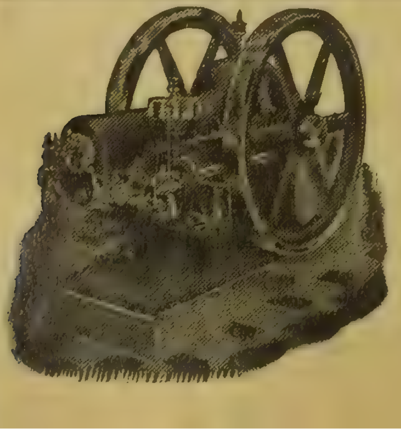

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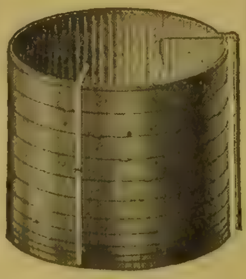

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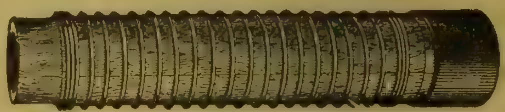

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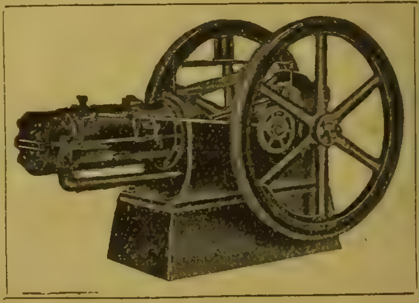

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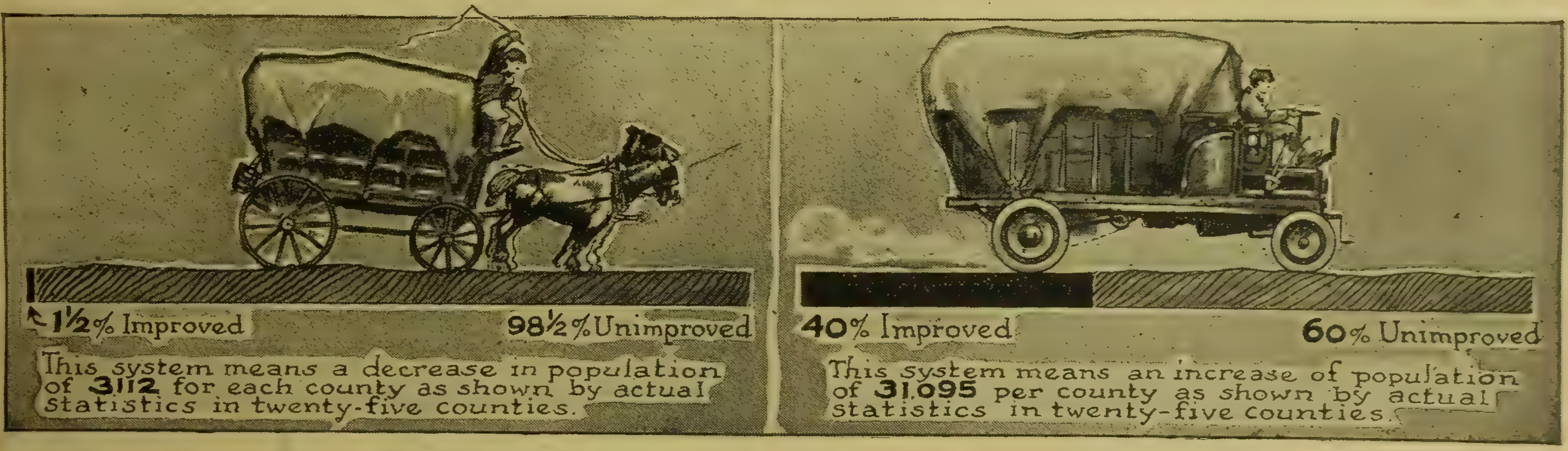
Los Angeles July 28, 1910 San Francisco

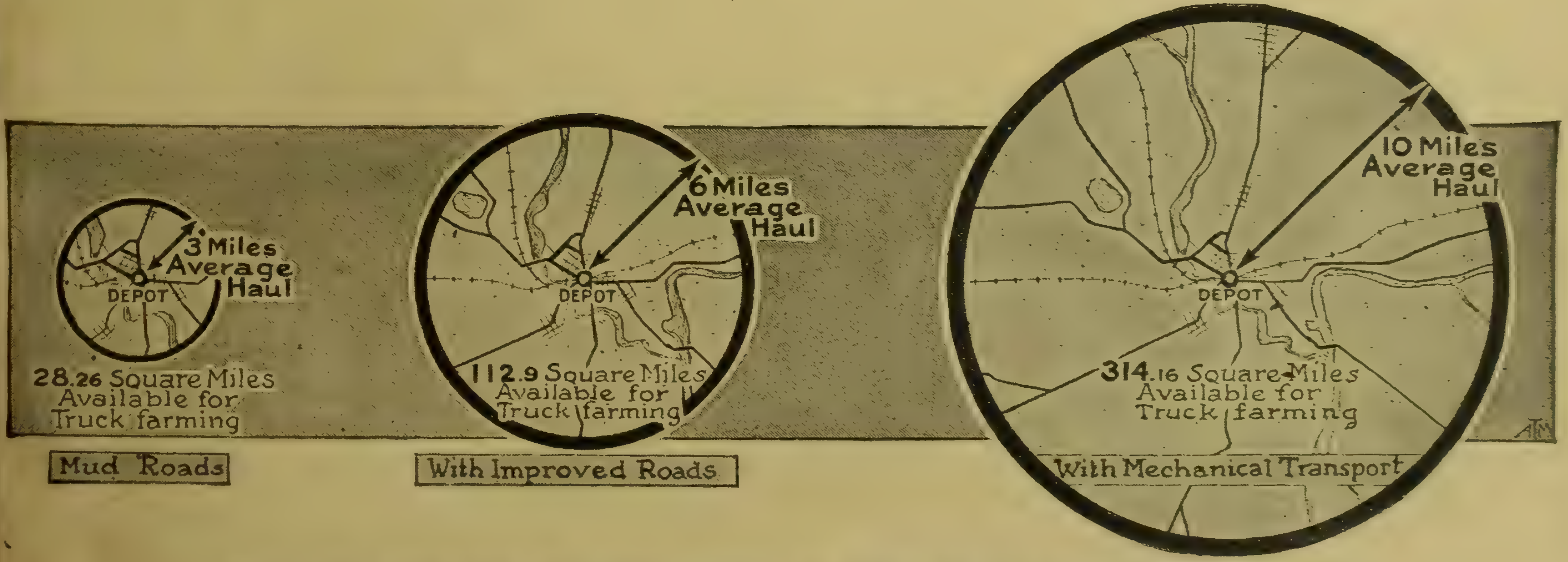
Good Roads and Autos Increase Farm Earnings



This system means a decrease in population of 3112 for each county as shown by actual statistics in twenty-five counties.

This system means an increase of population of 31,095 per county as shown by actual statistics in twenty-five counties.

Bad Roads the Chief Cause of the Congestion of Our Cities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California Cultivator

Vol. XXXV—No. 4 Los Angeles, California, Thursday, July 28, 1910 Subscription $1 a Year

Utility of Good Roads and the Motor to Farmers

How Well-Made Highways and the Automobile Will Make Farm Life More Attractive and Profitable. Both are Advocated by the National Grange.

THIS article deals from the viewpoint of the farmer with what after all is a farmer's question—the present high cost of food. It gives the farmer's ideas about the cause and cure of the evil described by Mr. Jas. J. Hill as: "An enlarged city life and a neglected country life, a crowded artisan population clamoring for food, a foreign demand for the product of their wages limited to fields where the competition of all the world must be met and overcome." While the newspapers and magazines have lately been full of remedies for existing conditions, they have mainly been put forward in the interests of the cities. The side of the question which seems to have been neglected is how the whole matter affects the man who is being asked on all sides to come to the rescue, the man who lives on the soil and raises the nation's food supply, the farmer himself.

The first fact which should be brought out is that it is not the farmer who is responsible for the present high cost of living, and that it is not he who is principally benefiting by the present high price of wheat, beef, mutton, pork, corn or milk. It is true that he is receiving more for his produce than he did twenty years ago, but the increased reward of farming is only in line with the general increase in values all over the world. It must be remembered that the wages of farm labor, and the price of practically everything that the farmer buys, have increased in the same proportion.

Take the typical case of wheat. The retail price of flour in 1893 was $4.50 per barrel. The retail price of flour today is at the rate of $7.00 per barrel. Of the difference between former and present values the farmer gets about $1.00. The remaining $1.50, represents a change in the conditions of distribution. It means city prices as compared with country prices, and includes the speculative profits of the middleman. The divorce between the food producer and the food consumer, due to the overcrowding of the cities and the relative depopulation of the country districts, has placed the control of the country's food supply in the hands of a class who are speculators first and distributors afterwards. It is in the fact that the population is becoming more remote from the sources of food supply rather than in the fact that food production is more costly than formerly that the real reason of the present high cost of living must be sought.

In 1804 only 4 per cent. of the population of the United States lived in cities. At the present time the percentage is over 40. One interpretation of these figures—the one insisted on by Mr. Hill—is that whereas in 1800 there were 96 cultivators to supply four non-cultivators, at present probably not over 30 in every 100 people are in the agricultural sense producers. But it should be remembered that the general employment by the modern farmer of agricultural machinery, which makes the modern farm hand at least six times as efficient as his predecessor, prevents his relatively decreased numbers from having much effect on prices. What is important in the above figures in relation to the cost of living is that every increase in the urban population, and every decrease in the country population tends to put both producer and consumer more and more at the mercy of the middleman. An individual farmer has about as much chance under present conditions of determining what he shall receive for his milk, vegetables or corn, as the consumer has of determining what he shall pay for these products. The only remedy from the viewpoint of both the consumer and farmer, is such cooperation among the farmers as will enable them to deal on equal terms with the distributors. (See Report of the Country Life Commission appointed by President Roosevelt, which found that the principal and most pressing need of the rural districts was "effective co-operation among farmers to put them on a level with the organized interests with which they do business.") And this again is a question of convenient access both between farmer and farmer, and between farmer and consumer.

Translated into practice, access means roads. As we proceed we shall see that it means roads plus something more, but good roads at least are necessary. For the present let us see how far a system of highways similar to that existing in France would tend to reduce the cost of living.

Every commodity pays a "wheel tax," since nothing is nowadays produced where it is consumed, and a direct result of the crowding of the population into the industrial districts is an increase in the retail price of food due to increased haulage. The important fact is that the necessary increase of cost from this cause is many times greater than it need be, owing to our backward system of rural communication.

It has been calculated that the average length of road haul of agricultural produce under present conditions of rural transport is ten miles, at a cost of twenty-five cents per ton mile. The aggregate amount handled is at least 200,000,000 tons annually. In fact this figure is far below the actual total, for it only takes account of produce actually delivered for shipment to the railroads, and makes no allowance for produce shipped by water, or for coal, lumber, supplies, machinery, etc., hauled from the depots to the farms. This gives us as the direct "wheel tax" paid by the ultimate consumer, the gigantic annual sum of half a billion dollars. Many years of experience in France, Germany and England, have shown that on improved roads in fair condition the ton mile cost should never exceed ten cents. This would give the cost of hauling 200,000,000 tons an average distance of ten miles as $200,000,000. In other words, there is a direct addition to the cost of living of the nation as a whole of $300,000,000 per annum, which is quite unnecessary and due simply to our inferior road systems. If we take the total road mileage of the United States as 2,000,000 it follows that every mile of unimproved road means a net loss to the country of at least $150 per annum. And this charge is actually met in the shape of increased food prices, principally by the class who can least afford to bear it—the wage earners.

While the substitution of good for bad roads would directly reduce the cost of living by reducing the haulage cost on food products, the indirect effect in the same direction would be even more important. It has been proved that in every case where the roads have been improved, the rural population has increased. To quote Senator J. H. Bankhead of Alabama: "The trend of population from country to city is most apparent in those sections of the country which are isolated by reason of bad roads. An example illustrating this point has been cited by the United States Office of Public Roads, in which it is shown that in 25 counties showing an increase of population from 1890 to 1900, averaging 30,000 to the county, 40 per cent of the roads were improved and maintained in first-class condition, while in 25 counties in the same states showing a loss of population in the same period of 3,000 to the county, only a little over 1 per cent of the roads was adequately improved." Thus the congestion of the cities, which is at the very root of the question of the increased cost of living, would be directly relieved by the construction of adequate roads.

Another result of road improvement is the accompanying increase in the value of the adjacent farm lands. This is of course a direct gain to the farmer, but it is not a selfish gain, for the enhanced value of the land is due to the fact that it can render better service in food production. Land does not remain uncultivated because it cannot be made to grow anything, but because it does not pay to cultivate it. Make such land accessible and it at once becomes valuable as a source of production.

To quote Senator Bankhead again: "It is rarely the case that the average increase is less than 20 per cent. of the total value, while numerous examples can be cited of increases exceeding 100 per cent. The last Federal census, taken in 1900, shows that there has been an increase in the farm values of the United States amounting to 27 per cent and that only four states of the Union show a depreciation of farm values. Massachusetts shows the largest percentage of increase in these values and this increase has developed since the policy of state aid for road improvement was adopted. Prior to that time the farm values in that state were depreciating."

One more consideration: Mr. Hill, in a speech printed in the N. Y. World of April 3, attributes the high cost of living to the fact that we are living too extravagantly. He holds that we are wasting our dollars in unproductive expenditure instead of using them as capital. And he cites France as a shining example of the beneficial results of natural thrift. "The wealth of the French people," he says, "increases by about a billion dollars every year. This increment may be drawn upon by enterprise anywhere. It is not gathered in huge fortunes, but distributed among millions of holders in small sums." France has the most superb road system in the world, and Mr. Francis B. Loomis when commercial agent at St. Etienne, France, reported that: "It is the opinion of well-informed Frenchmen who have made a practical study of economic problems that the superb roads of France have been one of the most steady and potent contributions to the material development and marvelous financial elasticity of the country."

So much for the roads themselves. Let us now consider the best method of utilizing them so as to promote that access of producer to consumer

(Continued on Page 89.)

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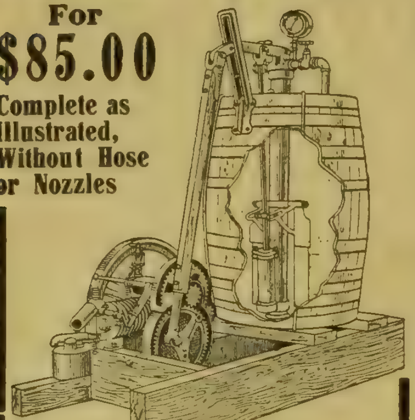

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By Ben F. Thorpe, Covina.

THE subject of commercial fertilizers becomes one of more vital interest to the grower of oranges or lemons each year, as his trees are ever growing large and producing new branches, leaves and roots, as well as more fruit producing area that calls for more plant food.

As the soil territory on which the tree feeds is not increased in size, but remains the same as when the tree was first planted, it stands to reason that a larger application of fertilizer must be used. The soil that surrounds an orange tree in a grove planted the usual distance apart, of from 20 to 25 feet, is sufficiently rich in most citrus localities in California, to grow a good tree, and perhaps, for the first few years of bearing, to produce a fair crop of fruit on the trees, without the addition of any fertilizer. But, how about the future years? Would a man think of providing a five years supply of food for his family, and then stop feeding them? No, he must keep on providing more, and usually, better food as they grew older. So it must be with our orange and lemon orchards. They must continually be fed, if we wish to reap harvests from them. We attend the farmers institutes and clubs, and visit the demonstration trains which the state sends out, and are ever interested in the subject of fertilizers, and the more we listen, study, and investigate, the more evident it becomes to us, that each man must solve the problem of fertilizing his own orchard, which has just as much an individuality, as the owner, and what might be good fertilizing for one orchard, might not apply to our own. The soils are so entirely different in California that each ten acre grove should have its own needs carefully investigated and studied before spending much money for fertilizers. And even on a five or ten acre grove there may be different kinds of soil that would not respond to the same treatment.

One thing seems certain, and that is our soils are generally deficient in humus and nitrogen. Here is where the great value of barnyard manure comes in, for its principal fertilizing value is derived from these two factors. There is not much danger of using too much barnyard fertilizer, and if we could have but one fertilizer, this would be unquestionably the best to use. However most of us, make but one application of barnyard manure a year, and this cannot be expected to supply enough nitrogen for the trees for the entire year. The orchardists who are making the most careful study of fertilizing, are not depending on one application of any fertilizer, and especially commercial, a year, but are making several applications of smaller amounts during the year. These same orchardists are also following the plan of using the units, derived from using the different kinds of fertilizers to supply what they consider their trees need; at one time a certain amount of some kind of fertilizer to supply the phosphoric acid; again, one that will give potash when needed, and again one to furnish nitrogen. For nitrogen supplying, dried blood and nitrate of soda are both good, and both have their advocates. Finely ground steamed bone meal, and the different superphosphates for furnishing phosphorus to the tree, are the ones generally used for this chemical when needed.

As to the amount of fertilizer that a tree requires per year, it is another of those problems which the orchardist must determine for his own grove. On a twelve year old navel grove I am this year using thirty pounds of superphosphates per tree, in four applications during the year. On the same grove, I am using ten pounds of nitrate of soda per tree, in seven applications, the first being three pounds per tree in March at the time of blooming, two pounds per tree in May, and one pound per tree each following month. In this way, I think I am giving my trees a steady supply of plant food during the growing period, using cover crops in winter.

There are of course fertilizers that could be used to good advantage in many localities, other than those supplying the chemicals I have mentioned. Many localities have an acid soil that would be improved by an application of some form of calcium or lime, in the shape of gypsum or land plaster, or air slacked lime, and in some instances the application of magnesia might correct some defects, or in certain localities, iron.

There are vast riches of chemical wealth in all our soils, but unfortunately many of them are in an insoluble form, and not available for plant food, but in time our agricultural scientists may discover a way to release some of them in an economical manner that will go a long way toward reducing the cost of fertilizing.

I have already written some articles in this magazine on the subject of cover crops as having value as fertilizing agents, and will not say anything further at this time, except to claim that I consider them of great help to an orchard, when properly used.

Let him who doubts the value of fertilizing, if there be such a one, try the following experiment; Take half of an orchard that has not been fertilized and give it a good heavy fertilizing, somewhat after the manner I have mentioned in this article, and then leave the other half without any fertilizing, and note comparisons. He will have an object lesson any way.

WATER VALLEY.

A subscriber at Corona sends an interesting account of a section in the Mojave Valley known as Water Valley. This valley has an altitude of about 2000 feet and an area of some 35 to 40 square miles. It is underlaid with abundant water at a depth of twelve to twenty feet. The Santa Fe runs through the center of the valley. Alfalfa, grain and even garden stuff have proved profitable. The market up to this time has been in the various mining towns adjacent, very good prices having been received. Some of the wells are pumping as much as 150 miner's inches. It is too cold for citrus fruits but nearly all others do well. The section lies about ten miles west of Barstow.

Orange growers will give greater attention to frost protection this year than ever before.

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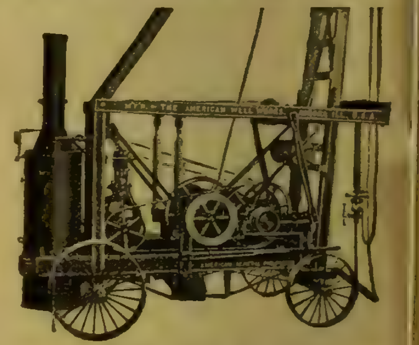

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Owens Valley Land
See Announcement on Page 9

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A HINT AND A COMPLAINT.

I have been glad to see several ways of ridding land of squirrels published in the Cultivator. Some time ago a friend here was telling me of a way he thought he would work. He fills up the holes with a hoe, pulling in the dirt and tamping it in as tight as possible with hoe handle, then pulling the lose dirt on top of hole. The idea is that the squirrel goes to dig out and only leaves himself room to reach the surface, and as he nears the surface, the loose dirt on top runs into the hole and he is smothered before he can get out. I did not think much of the plan when first told of it, but another neighbor who has land adjoining his told me he had made a success of it. I went to see the place today. He had heaped up probably one-half a bushel of dirt, not more, and there were lots of heaps on the place, hardly any of which were opened. At least nine out of ten were closed and they were all occupied with squirrels. What a lot of squirrels there were there as I have often seen them. There may still be some there, but there are very few signs of fresh work. Am going to try it myself on some land near me, having cleaned mine out by all means I could think of, but never found anything a real success except carbon bisulphide and irrigation. Am glad to see the distillate and gasoline methods described and will try them.

I should like to say that practice knocks out a great many theories. A friend here told me that he was going to put out apricots because they headed to the wind, and I have seen this statement in the Cultivator. There are apricots all over this colony and I have three varieties and none of them head to the wind. They do not even stand up to the wind as well as most other trees; even a walnut that is supposed to be very tender to the wind stands it as well or better than an apricot.

Also some of us went in for cover crops last winter and we are still working on them. I could have hauled manure three times over while getting rid of cover crop. One man hauled his off and I was advised to do that with mine. I expect I have injured my trees on account of it. It is a very risky proposition. I was told a chain would do it. Now a chain is simply a nuisance in a tangle. The only thing I could get to do anything with it at all was the rolling coulter, but it seems to me the larger the plow the better for this work. A small plow will not turn it under at all. I thought my cover crop was growing very slowly, but it got started and then I wished it would stop, and before I had done a day's work on it, wished I had never heard of cover crops. If you get up any more cover crop editions, warn people of the job they will have. I expect those who write and tell of turning under cover crops don't know what a real cover crops is. One neighbor with a chain was showing me how easy it was, but I said, "That is nothing you are turning under there," and he said, "That is as much as is turned under in Southern California for a cover crop." I had to plow a neighbor's orchard here after that and I turned under stuff more than twice as much as he had, easily, but when I came to my own it had got so strong and tangled up and there was so much of it I could not cover it up, and this made it impossible to do anything with the place. I could not get water on it on account of the mess, could not furrow it out, cultivate it or do anything with it. One of my neighbors is now disking his for the second time and I don't know how much plowing he has done on it. One neighbor told me after trying to cover up a crop for another, that he wouldn't try to get his under at all. He would hoe round the trees and let it go, but one and all want no more cover crops. I don't know when I'll ever get mine in shape. My orchard has taken up so much time I could not get in other crops as I had intended and with it all, it is now in a mess indeed, and it has put me in a bad hole. I am three months behind with my work. I expected to have had everything cleaned up and the land all in shape before the first of April and ready to put in corn by that time. —Fred Gardiner, Greenfield, Monterey county.

* * *

The hint regarding squirrel extermination may be good. Certainly, it would leave the land in good condition, but we imagine it would mean considerably more work than poisoning and probably more than the bisulphide or distillate treatments. If it eradicates the pest, that is the question, however.

Regarding Mr. Gardiner's complaint as to plowing under cover crop, will say that we have personally had experience along that line and found no difficulty in forcing under rye as tall as five feet, and covering almost completely. The ground was plowed some eight or ten inches deep and chain was used of just the right length to escape the falling dirt as it was thrown over. In addition, a long wire was attached to the chain so as to drag back underneath the furrow. This helped to pull it out tighter and the tallest and toughest rye was forced down into the bottom of the furrow, and the dirt falling on top left scarcely a straw projecting. Some prefer to crush down the green manure crop and then disk so as to cut it into short particles, later plowing. We feel that the trouble with our correspondent and his neighbors is that they have allowed the plowing to go until the ground became too hard. If that is the case, they have an all-summer job. Green manure crops must be handled right or there is trouble. When properly plowed under, results are most satisfactory compensation.

IRRIGATION INVESTIGATIONS.

The U. S. Department of Agriculture, through the Irrigation Investigations, has just issued a bulletin on the use of windmills in irrigation, by P. E. Fuller. It deals with the practical phases of the utilization of wind power in securing water for irrigation, describing in detail the methods to follow in choosing a location for a well, sources of water supply, wells, mills, pumps, towers, and reservoirs. It also gives cost of maintenance and crops suitable to be grown under windmill irrigation.

The information contained in this bulletin was prepared for the purpose of assisting settlers in developing and utilizing small water supplies. It is known as Farmers' Bulletin No. 394, and may be had free of charge upon application to U. S. Irrigation Investigations, Berkeley, Cal., or to any representative in Congress.

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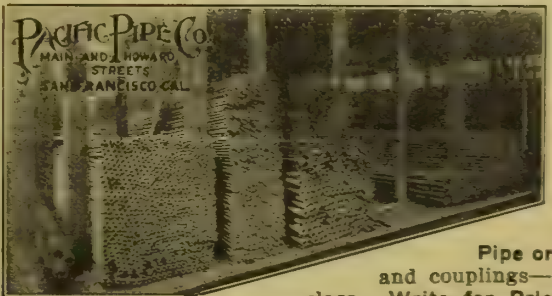

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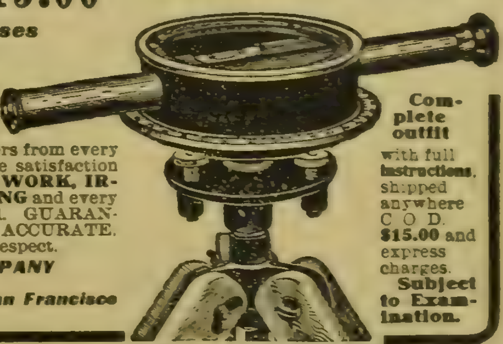

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COUNTY HORTICULTURAL COMMISSIONERS.

SINCE the enactment of the present horticultural law thirty-five counties have fallen into line and appointed one commissioner to enforce the law and guide in the fight on the pests of agriculture. We say agriculture because the term Horticultural Commission is to a certain extent misleading. These commissioners, have the general interests of farming at heart as much as those of fruit growing.

It will be noted in the following list sent us by State Commissioner Jeffrey that four counties have appointed deputies. It is to be hoped that the other 22 counties will soon be in line with a working commission.

List of County Horticultural Commissioners appointed under new law July 21, 1910.

Alameda—Fred Seulberger, Oakland.
Butte—Earle Mills, Oroville.
Colusa—L. R. Boedefeld, Colusa.
Fresno—F. C. Schell, Fresno.
El Dorado—J. E. Hasler, Placerville.
Imperial—W. E. Wilsie, El Centro.
Kern—C. A. Maul, Bakersfield.
Kings—B. V. Sharp, Hanford.
Los Angeles—A. R. Meserve, Los Angeles.
Los Angeles, Deputy—Stephen Strong, Norwalk.
Los Angeles, Deputy—Ervin Dingle, Los Angeles.
Madera—George Marchbank, Madera.
Mendocino—J. R. Banks, Ukiah.
Merced—N. H. Wilson, Merced.
Monterey—J. B. Hickman, Aromas.
Napa—A. D. Butler, Napa.
Nevada—Newton Peck, Colfax, R. D.
Orange—Roy K. Bishop, Orange.
Placer—H. H. Bowman, Bowman.
Riverside—R. P. Cundiff, Riverside.
Sacramento—F. R. M. Bloomer, Sacramento.
Sacramento, Deputy—Elmore Chase, Fairoaks.
San Joaquin—Wm. Garden, Stockton.
San Joaquin, Deputy—J. F. Costello, Acampo.
San Bernardino—S. A. Pease, San Bernardino.
Santa Barbara—C. W. Beers, Santa Barbara.
Santa Clara——Earl Morris, San Jose.
Santa Cruz—W. H. Volck, Watsonville.
San Diego—C. H. Stuart, San Diego.
Solano—C. K. McBride, Vacaville.
Sonoma—A. R. Galloway, Healdsburg.
Sonoma, Deputy—W. I. Newcomb, Sebastopol.
Stanislaus—A. L. Rutherford, Modesto
San Benito—L. H. Day, Hollister.
Sutter—H. P. Stabler, Yuba City.
Tehama—Chas. B. Weeks, Red Bluff.
Tulare—A. G. Schulz, Porterville.
Ventura—E. O. Essig, Santa Paula.
Yolo—Geo. H. Hecke, Woodland.
Yuba—Geo. W. Harney, Marysville.

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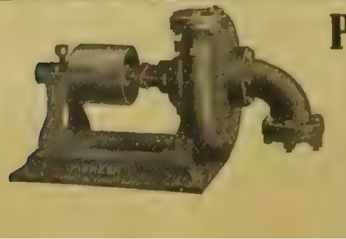

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FROM THE GROWER'S VIEWPOINT.

By Statistician Geo. Robertson.

THE raisin situation does not seem to be in a very satisfactory position from a farmer's point of view the world over, prices so far having been decidedly unsatisfactory.

The quantity actually exported from Spain during the last five years is as follows:

Year.	Hundredweight of 112 lbs.
1905	567,987
1906	323,685
1907	523,283
1908	520,370
1909	490,558

During the season of 1909-10 up to May 4th this year the quantity exported amounts to 465,580 hundredweight. Of this 389,983 hundredweight was shipped from Denia, 26,718 from Valencia, and the balance from other ports.

In spite of the growers having lowered their prices, shippers are inactive on account of the poor demand from foreign markets, which are overstocked. Thus low prices have prevailed. There is some demand, however, for distillery purposes.

The condition of the vineyards has improved with the last rains, but there has not yet been sufficient to counteract the previous drought.

The latest advices from Denia, dated June 17th, just received, state that the new season's crop is expected to be about the same as last year.

Sultanas.

Reports from Smyrna state that trade in Sultanas is depressed. Owing to the yearly extension of vineyards in the Smyrna district the average crop is now estimated at 60,000 tons. The 1908-9 season yielded about 55,000 tons, of which 52,000 have been exported to Europe, America and Australia, the remaining 3000 tons having been stored up in the country for lack of buyers. The new season's crop is estimated at about 50,000 tons. The heavy stocks of old fruit especially in England, and the general depressed condition of the trade have caused low prices. The local consumption is insignificant.

Figs.

On the other hand the Smyrna fig crop is all sold. The average crop amounts to about 25,000 tons, and this quantity was exported during the 1908-9 season.

The 1909-10 crop amounted to about 22,000 tons, and prices ruled high, and at the end of March this year, not a fig can be found in Smyrna, or in the interior.

Almonds.

The Spanish market for almonds at Alicante is quiet, growers being reluctant to sell, awaiting to get higher prices because stocks are short, and the coming crop will be smaller than that of last year owing to the long continued drought, and also to the late frost.

The greater part of the 1909 crop was damaged by rain during the most critical drying period. The average price of the season to growers barely reached 14 pesetas (about $2.52 per hundred weight of 112 pounds) for un-graded raisins delivered at the packing houses. This price leaves the grower with a deficit of at least 3 pesetas, or 52 cents per hundredweight, on the actual cost of production. In consequence of these low prices where irrigation is available, Muscat vines are being uprooted, and the ground converted into general agriculture, while in dry and semiarid conditions growers are extending the planting of almond trees among raisin vines, with a view of replacing the latter by almonds, now regarded as the most promising crop as a substitute.

GREAT RETURNS FROM APPLES.

Pomona Ranch, including 100 acres of bearing apple orchard, in the Touchet Valley in southeastern Washington, has been sold by J. L. Dumas of Dayton, former president of the Washington State Horticultural Association to Dr. C. F. Schlitz of Wenatchee, Wash., formerly of Canton, O., and L. M. Vannice and E. S. Hubbard of Dayton, for $150,000. In addition to the bearing orchard the sale covers 140 acres of land, 30 acres of which is in young trees. The fruit ranch eventually will cover 200 acres.

The crop, estimated at 75,000 bushels, goes to the buyers, who are thoroughly familiar with the country. Dr. Schlitz came to eastern Washington from Ohio, five years ago, since which time he has studied scientific methods of orcharding and the details of managing a commercial ranch; Mr. Vannice has had 36 years' experience as a farmer in Columbia county, retiring four years ago, and Mr. Hubbard, a native of Washington has farmed in the southeastern part of the state all his life. They have made several entries in the carload class at the Third National Apple Show in Spokane, November 14 to 19.

Pomona Ranch came into national prominence four years ago, when it produced its first big crop. The gross receipts exceeded $100,000 during the three succeeding years. Apples grown there commanded the highest price in the Liverpool markets; the value of prizes won at the National Apple Show in Spokane in 1908 exceeded that of any individual exhibitor, and these, with other achievements, have made Pomona and its owner famous. Pomona Ranch is the pioneer commercial orchard of the valley and forerunner of an industry which is rapidly eclipsing all others except grain farming in that part of the country.—August Wolf.

FOR THE CODLING MOTH.

Prof. C. P. Gillette, of the Colorado Agricultural College, has discovered a new insecticide for the codling moth, which has proved effective in destroying the worms, and probably will be found not so injurious to apple trees as other arsenical poisons. Sulphide of arsenic is the name of the new poison. It comes cheaper than the arsenics now in use.

The Willamette Valley Apple Growers Association has petitioned the legislature for an appropriation to be used in investigating horticultural troubles, especially fungous growths.

IN "OFF YEARS."

It pays to care for well located orchards in off years when the crop is a total or partial failure. The care the trees receive this summer will help to determine the number and vitality of the fruit buds which will be formed this season for next year's crop. Watch the trees carefully during the summer. The scab fungus and some other diseases which ordinarily do so much damage to the fruit, work also on the leaves. Spraying with Bordeaux mixture is very helpful in keeping these diseases in check, thus protecting the foliage and providing favorable conditions for a good crop next year, even though this year's crop may be light. Watch for leaf eating insects also, and if any are present, add two pounds of arsenate of lead or six ounces of Paris green to every 50 gallons of Bordeaux and spray thoroughly.

NUTS RICH FOOD.

The edible portion of nuts, with few exceptions, is very concentrated food, containing little water and much fat. In general, nuts are also rich in protein. Those ranking high in this nutrient, the pignolia, a variety of pinenut imported from Spain, with 33.9 per cent, the peanut with 29.8 per cent, and the butternut with 27.9 per cent protein, surpass most ordinary animal or vegetable foods in this respect. The almond, beechnut, and pistachio, with 21.4 per cent, 21.8 per cent, and 22.6 per cent respectively, compare favorably with dried legumes. The Brazil nut contains 17.4 per cent protein, the filbert 16.5 per cent, the walnut 18.2 per cent, the hickory nut 15.4 per cent, the pinenut 14.8 per cent, the pecan 12.1 per cent, and the dry chestnut but 10.7 per cent. The dry acorn, fresh chestnut ,and cocoanut, with, respectively, 6.4, 6.4, and 6.6 per cent, are not as rich in protein as bread.

We have been importing millions of dollars worth of nuts and nut products every year, but this country has now established at Cornell University, perhaps the first course in nut culture in the world, and it is probable that the "millions of dollars worth" will soon figure on the export side instead of the import side. For the course in nuciculture at Cornell, there is an annual prize of twenty-five dollars for the best grafter.

Through the center of France, from the Bay of Biscay to Switzerland, there are large plantations of chestnut trees. The nuts are large and during the fall and winter the poor often make two meals a day on steamed chestnuts, eaten with salt or milk. Physicians say they are wholesome, healthy, nutritious and fattening.

The ninth annual Convention of the National Nut Growers Association will be held in Monticello, Florida, November First, Second and Third, 1910.

California peaches have had some competition in Eastern markets with Georgia and Texas fruit, but the higher quality of California fruit gives it the advantage.

The Kings county horticultural commissioner reports: "Many of our orchards and vineyards are not as free from weeds as we would like to see them."

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Dairymen and stockmen are requested to write of their experience. Mrs. Sherman is always willing to answer queries and this, with experience of other workers, will make this department of greater value.

SOMETHING FROM NOTHING.

By Mrs. Minna E. Sherman.

THE old saying of Barnum's that the American people like to be fooled, has been twisted entirely out of its real meaning until it now stands for the untruthful statement that the people like to be duped. The fooling they enjoyed was that of "cherry colored cats." We are a joke loving people—even the staid Cultivator has been giving us lately that ever laughable story of the Jumping Frog. That is our form of being fooled, something with an innocent jest in it.

Oleomargarine.

The oleo people have played with us until the mass of the people are no longer ready to use the little color tubes to make the white stuff look like butter when served. White butter is not appealing to the eye and offends the palate. The only plea offerred that seemed to bring sympathy was that the dairymen were combining to rob the cotton planter of a part of his earnings, when cottonseed oil was not good enough for butter imitation. The foolishness of that plea became evident, when, before the Congressional Committee the fact was brought out that all the cottonseed oil used was too litle to be considered a factor in the case, five to ten per cent being all that was in the finished product. The fact was that cottonseed oil was too high priced for this use. The whole fight then lies in making something that can be used as an imitation of butter and passed off in boarding places as butter.

Water.

In butter stretching the creamery people took a hand as well, but this was when the butter wars were raging and the butter maker that could make the most butter from a given amount of cream, or rather of butter fat, was the man to secure the job. The creamery men caught on from the dairy men to the fact that butter could be increased by addition of water at proper temperature. The early records of wonderful amounts of butter fat given by cows when the cream was churned, fell down before the Babcock test. The cows that went up to the Chicago World's Fair with big churn records were cut down in their performance woefully. Churn tests often overran in butter the actual fat test as high as thirty-five to forty per cent, if the butter was instantly worked. This was a bit of foolishness that has a sporting element that makes it more forgivable than some other sins against truth. The creamery men studied out how this was done and a few years ago, much of the butter ran twenty to twenty-five per cent over the fat test. I saw one instance reported in the newspapers where it was said thirty-two was found as an overrun. This I think doubtful, as the butter would be quite hard to carry to market if that much floated. The state laws now fix the amount of water in butter and a number of arrests, and heavy fines as high as $500 have broken up this practice.

Churning.

When the butter is in the granular form about the size of wheat grains after the buttermilk is drained off, instead of dashing on cold washing water to float out the buttermilk remaining, warm water is dashed on, then the salt. The churn is rocked a few times and the mass gathered up, put into the butter forms and as soon as possible, cut and put into the parchment paper. When cloth was used the extra water was often lost but the use of parchment paper kept in the water, as well as it kept out the air. The one thing that has had more patents issued on it than any thing else in the Patent Office at Washington is the churn. The simple matter that the butter is forced out by mechanical action from cream that is ripened properly and at the right temperature is overlooked and the blame for long churning is placed on the churn. More foolishness again.

Merger.

Every little while the old idea of merging or increasing the butter comes out. At one time it was Black Pepsin that was sold for forty or fifty cents a pound—a harmless lot of stuff mostly baking soda worth ten cents a pound. It might as well have been sand, for a tablespoonful was used and the hot water used to mix it with the finished butter made it into a slushy compound holding the water. Just now we have a machine offered for sale, that by adding a pint of four cent milk to a pound of butter will make two pounds of butter. The machine for doing this is sold for two or three dollars and that is where the profit is. Now if you wish to add a pint of milk to a pound of butter, do so by all means. Right in the kitchen is the egg beater, or the cake mixer, or the bread maker. Now take any one of these and take the pound of butter, cut it up, put on the pint of warm milk and turn the crank until you have the mass mixed. Set it away to harden.

Foolishness Again.

Now what have you? That much less butter fat in the mass. Take the cake that has always been successful and delicious. Make it, using a measured cup of this butter and see if the cake is not less rich! Try the same amount of butter served to each person on the table and see how many calls there come for more butter! In other words this is merely a form of wind pudding. The labor

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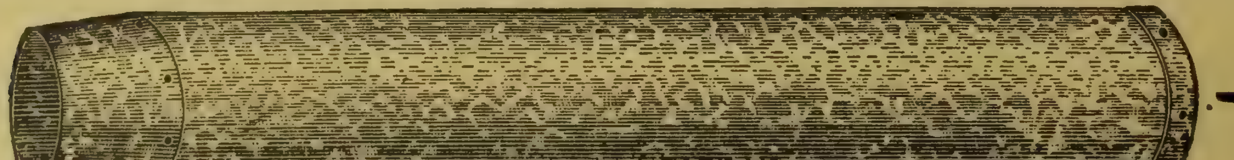

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is lost, because the butter fat has not been increased but merely stretched out a little in quantity. This reminds me of the stories that prevailed a few years ago in the magazines devoted to destroying the common sense of women. Really I always feel insulted over journals that are made of milk and water for women's reading. These tales were something like this. "I had nothing in the house, company came, I took three potatoes, two eggs, a stale buscuit and put them together and made a dinner for six. Do not believe it for it is foolishness to look for something out of nothing!—M. E. Sherman.

PELLAGRA IN THE HORSE.

The story of pellagra, by Marion Hamilton Carter, in McClure's Magazine, has caused the American people to sit up and take notice. The following quotation, like Lincoln's rat hole in the corner, will bear looking into:

"The hope of the American situation lies in the Pure Food law and the horse. At the first pellagra conference, Doctor Powers pointed out that pellagra and 'blind staggers' in horses are probably one and the same, and Doctor Wood suggested that we may actually have at hand all the ready-made serum that we need."

Space will not permit of a general discussion of the subject, but here are a few pertinent facts in connection with this comparatively new and unexplored field of scientific research. For many years, at least, corn has been considered a dangerous food for the horse. It has killed many times more horses from colic than all other foods combined. Again, there is a disease in cattle known as "corn stalk disease," which, like pellagra, has defied every effort to determine its cause. This is a disease of cattle and attacks them only during the winter months when they have fed on corn stalks in the fields.

Now, on the other side of the proposition, we must note this: The blind staggers of the horse from eating corn is in no way different from that produced from any other food, save in its frequency and severity of attack. The symptoms are not those characteristic of toxemia and certainly have no resemblance to the symptoms described as being peculiar to the nervous type of pellagra. It is difficult to see how this condition of the horse can be considered in any other light than a flatulent colic with more or less reflex brain disturbance. Pellagra is essentially a chronic condition; while blind staggers is always acute, and if death does not take place within two or three days, the animal goes on to complete recovery. This condition of the horse is not always associated with the feeding of corn that has been heated or handled in such a way as to make the presence of toxic substances probable. It certainly requires an extreme and unwarranted stretch of the imagination to see any relation of blind staggers to pellagra.

There is a condition of poisoning from eating mouldy corn stalks that in the horse is just a little more worthy of consideration in this connection. But even here there is never a chronic condition following with special skin, intestinal, or nervous symptoms.

We are unable to discover at the time upon what grounds the author of the article in "McClure's Magazine," or Doctor Wood assumed that the horse is subject to pellagra.—Geo. H. Glover, Colorado Agricultural College.

Auction

100 head of live stock, 300 chickens, machinery and implements, on my ranch, four miles northwest of Garden Grove, one-half mile north of Cordorniz Station, and five miles southwest of **ANAHEIM.** Take Santa Ana cars to Cordorniz Station. Teams in waiting.

Thursday, Aug. 4th, at 10 a. m. sharp.

Forty head of fine dairy cows, Jerseys, Holsteins and Durhams, all young and in fine condition, fresh and coming fresh, large, rich milkers, in fact one of the very best herds of dairy and family cows in this locality. Twelve head of fine yearling heifers, one thoroughbred Durham bull, 2½ years old; one Jersey-Holstein bull, 15 months old; four head of good work horses, weight about 1400 lbs. each, all first-class stock; one team of work mares, weight about 1050 each; good all-purpose team; five brood sows, twenty-six head of fine shoats, nineteen head of pigs, one thoroughbred Duroc-Jersey boar, 300 laying hens, all last year's fowls, White and Brown Leghorns, Plymouth Rocks and Rhode Island Reds.

Implements: Two plows, two harrows, one cultivator, mower, rake, De Laval cream separator, ½-H. P. motor, 2-H. P. boiler, 500-lb. milk tank, pails, cans, two 600-lb. Fairbanks scales, alfalfa seeder, etc., etc.

Owner is retiring from the business, having leased the ranch, and everything positively must and will be sold to the highest bidder on the above date. No limit or reserve. Do not miss this genuine closing out sale. Free lunch at noon. Terms spot cash.

JOSEPH M. C. HILL, owner.

RHOADES & RHOADES, Aucrs., office 830-832 South Main St., Los Angeles.

Owens Valley Land

See Announcement on Page 91

WHY CREAM TESTS VARY.

Variation in tests has caused much dissatisfaction in the selling of cream. When the cream is from the same cows, which have been fed the same ration and milked by the same man, and when the same separator is used, the farmer naturally thinks the per cent of fat in the cream should remain the same.

Errors are often made in making tests, especially in taking the sample, but variations constantly occur that are due to other causes. The most common causes of these variations, as pointed out in a circular, No. 37, by Prof. C. H. Eckles, of the Missouri Agricultural Experiment Station, Columbia, Mo., are as follows:

1. Variations in the speed of the separator.
2. Variation in temperature of milk separated.
3. Rate the milk flows into the machine.
4. Amount of water or skim milk used in flushing out the bowl.
5. Change in the richness of the milk separated.
6. Adjustment of the cream screw.

Change in the speed of the separator is the most common cause of variation. The greater the speed of the separator, the smaller the amount of cream and the higher the per cent of fat.

Again, the temperature of the milk separated varies on the farm from day to day. If cream tests 30 per cent when the milk is separated at 90 degrees, it may test as high as 40 per cent when separated at 70 degrees. Under average conditions on the farm, however, the variation in fat due to change of temperature will not amount to more then 3 or 4 per cent.

A third cause of variation is found in the rate at which the milk flows into the machine. If less than the regular quantity flows into the bowl, the tendency is to increase the per cent of fat in the cream.

The richness of the milk separated affects the richness, but not the quantity of cream. The richness of a cow's milk depends on inheritance and can not be changed permanently by feed.

Small variations are likely to occur from the other causes suggested by Prof. Eckles. By the use of an ordinary Babcock testing machine and by measuring the sample of cream into the test bottle with the same pipette as is used for measuring milk, any farmer can make a test of his cream that will satisfy him as to the accuracy of the test he receives from the cream buyer.

METHOD OF DOCKING SHEEP.

Methods employed in cutting the tails from sheep in the division of Animal Husbandry at University Farm, St. Paul, are, first to place the lamb on its back, pushing the skin on the tail back towards the body as far as possible so that enough skin will remain to cover the stump of the bone when the tail is cut off. In operating on lambs several months old draw the skin back closely to the body and tie a ligature tightly around the stub of the tail until an hour or two afterward to prevent excessive bleeding. Place the lambs in a clean pen bedded with clean straw. Cleanliness prevents infection, and in such an enclosure bleeding can be detected. Rams should be castrated at time of docking, while in the hands of the operator, if proper physical development of the organs has been reached. This condition occurs about ten days after birth.

The Farmers Union of Walla Walla, Washington, has won in its suit with telephone company which proposed to increase rates. The farmers are securing their phones at $6.00 per year.

A Porterville man succeeded in killing a mountain lion last week.

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Anthrax Cure, Milk Fever Outfits. See O. J. Weber Co., 225-227-229-231 East Sixth street, Los Angeles.

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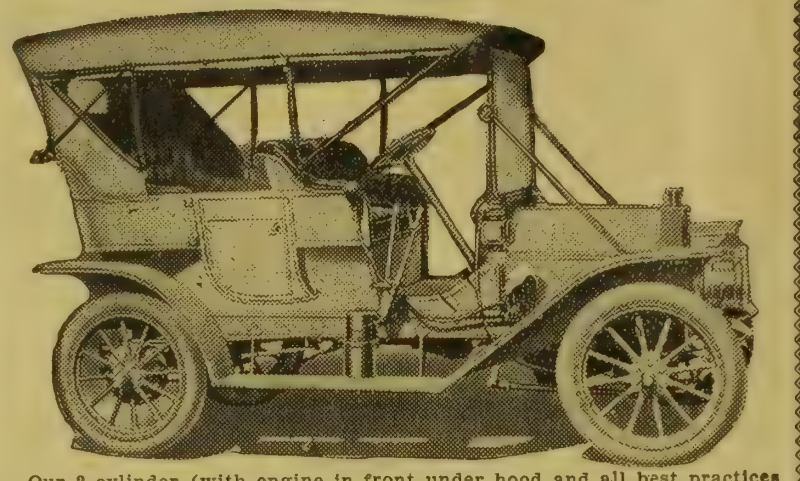

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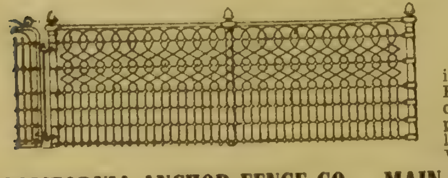

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The Ornamental Garden

LAWN PLANTING.

THERE is nothing more charming than a well-designed house surrounded by artistically treated grounds; and of the essential features of home grounds none is so important as a beautiful lawn—the rich, velvety turf of the smooth, well-kept lawn, varying in tones of green with the play of sunlight and cloud shadows, being the heart and life of all.

"The Tropics may have their delights, but they have not the turf, and the world without turf is a dreary desert. The Teutonic races all love turf; they emigrate in the line of its growth."—Charles Dudley Warner.

A perfect and enduring lawn, one of luxuriant richness with closely interwoven, firm, deep and elastic turf, is only created by sowing a composition of the various kinds of grass seeds suited to the conditions and the climate. Several varieties are needed, that the lawn may be verdure-clad during all seasons, and the seeds must be sown liberally (at the rate of from four to six bushels per acre), not only that a lawn may be produced quickly, but because the kinds of grasses suitable for perfect lawns are fine-leaved and should take entire possession of the ground promptly, thus checking the development of weeds, the seeds of which are in all soils. The coarse pasture and hummock-forming grasses will not produce a fine lawn. Good, rich, deeply worked soil, either of a friable texture or else under-drained, is as necessary for the production of a perfect lawn as for garden crops, although most grasses, being accommodating plants, if they do not get the requisites for best results, will do their best with what is supplied them. Early and frequent mowing and rolling, as well as the liberal application of water through a lawn sprinkler during dry seasons, is one of the secrets of maintaining beautiful green turf.

We not infrequently see, after a dwelling costing five, ten, twenty or thirty thousand dollars is erected, that the grounds surrounding it are left to the tender mercy of some ignorant pretender to grade and put in shape. The educated, intelligent architect's duties in many cases end with the completion of the building, and the "garden architect" is installed to grade for the lawn; and a common consequence is that the beauty of the place may be forever marred, for this matter really in many cases requires as much intelligence and good judgment as the construction of the dwelling itself. One of the first conditions for a perfect lawn is that the land be perfectly drained, either naturally or artificially; if the subsoil is sand or gravel, so that water can quickly pass through it, then there will be no need for artificial drains, but if there is a stratum of adhesive clay for a subsoil, then drains are indispensable every fifteen or twenty feet. As the formation of the lawn is the foundation of all subsequent operations, it is imperative that it be carefully done; for if badly done at first it cannot be changed or altered, unless to the great detriment of trees or shrubs that have been planted or flower beds or walks that have been laid out.

The first thing to be done is to get the ground shaped to the desired grade, taking care in grading that when hills or rocks are removed, sufficient subsoil is also removed to be replaced with top soil, so that at least five inches of good soil will overlay the whole in all places; and where trees are to be planted there should be twice that depth of good soil. When the grading is finished, if the nature of the ground requires it, drains should be laid wherever necessary; then the whole should be thoroughly spaded or plowed.

Seeding.

Sow seed early in morning or on a very still day when an even distribution may be secured. Rake in very lightly and roll. Sow at the rate of a pound to 250 square feet. Blue grass is usually preferred in California though some use mixtures, especially a sprinkling of white clover.

Terraces and Slopes.

On sloping banks it is often necessary to use sod, as the rains wash the soil off before the grass seed has time to germinate. It is sometimes even necessary, in sodding very steep banks, to use pins eight or ten inches in length to pin the sods in place, to prevent them from being washed down by excessive rains before the grass roots have had time to fasten in the soil. In small yards sodding is often done so as to get immediate results; but in all such cases great care should be taken to see that the sods used are of the proper quality, otherwise it is much better to wait a few weeks for the lawn seed to produce the lawn. If the slope is not too steep, sowing thickly then covering with burlap sacks till the seed begins to prick through is a satisfactory way.

Fertilizing.

The question of fertilizers for the lawn is an important one. If the soil is naturally a deep, rich loam, it is not indispensable that manure be used the first season of sowing, although in every case it would be an advantage, and is really essential if the soil is poor or light. Perhaps the best way to apply well-rotted manure is to spread it thick enough to cover the ground after plowing or digging, and then harrow or rake it in; though a little more costly, the best plan to insure permanency for the lawn is to use from 2,500 to 3,000 pounds per acre of coarse ground bone.

When the land has not been fertilized before sowing, it is necessary to use some top-dressing of manure each season to keep up the fertility of the lawn, and nothing is better for this purpose than to spread over it late in the fall well-rotted short stable manure enough to partially cover the surface. On no account should fresh stable manure be used, or the lawn will be very apt to be ruined by the introduction of weed seeds. This should be allowed to remain on until such time as the grass shows signs of starting in the spring when the rough portion should be raked off and a heavy roller applied, so that the surface of the lawn be rendered smooth and firm for the mower. If the top-dressing of well-rotted manure has been omitted in the fall, fine bone dust mixed with finely sifted wood ashes, in equal parts, may be sown on the lawn and we advise that the lawn be rolled about as thick as sand is usually strewn on the floor, and rolled down, several times during the spring.

Small Fruits and Vegetables

DESIRABLE GOOSEBERRIES.

MANY parts of California are not suited to gooseberries, but in other sections they are a profitable crop. To readers in such sections there will be interest in the following, written by W. S. Thornber, horticulturist, State College of Washington for Portland Oregonian:

The gooseberry, unlike most American fruits, is sorely neglected here in the West, even though very attractive financial returns have been realized from this crop. Two causes are apparent for this neglect—one, the difficulty of picking the fruit, and the other the almost universal but erroneous belief that gooseberries are good only when used in their green state. Rarely if ever do we see ripe gooseberries upon the market, yet there is no better fruit for canning, spicing and preserving than our large, rich gooseberries.

Both the English and American sorts do well in most sections, but in a few places gooseberry mildew does some damage to some of the English sorts; yet it can be successfully controlled by thorough spraying at the proper time. Spray with sulphur-lime just before the buds open.

With reference to varieties, the European ones are the Carman, Columbus, Crown Bob, Industry, Keepsake, Lancashire Lad and Portage. We will briefly mention the characteristics of each variety.

The Carman is a small, poor, unsatisfactory plant, with short, recumbent canes and a small amount of yellowish green foliage, which is nearly always seriously affected with both anthracnose and gooseberry mildew. It is a light yielder of medium-sized, yellow-colored, poorly developed fruit, ripening about August 1. It is not desirable.

The Columbus is a small, bushy plant with short, stubby, poorly-grown canes and a fair amount of badly diseased foliage. The tips of the canes, the leaves and the berries are all more or less covered with mildew. The berries are very uneven in size, varying from very large to small, are of a greenish color and have thick, firm skins. The plants are only fairly productive.

The Crown Bob is a poor, unsatisfactory plant with short, slender canes, and a small amount of badly diseased foliage. Both anthracnose and mildew seriously affect them and both are moderately productive, ripening the fruit about July 15. The berries are large to very large, oblong in shape, of a deep, red color, thin, tough skin, and are almost covered with stiff, hair-like bristles. The size and quality of this berry is very popular in most markets.

The Industry is a large, thrifty plant, with good, strong canes and an abundance of dark green, healthy foliage entirely free from anthracnose and rarely or never affected with mildew. The plants are very productive and the fruit ripens about the middle of July each year. The berries are very large, uniform in size and color and have thick, tender skins and a rich, sweet flavor. The size, color and quality of the berries and the productiveness of the plants easily make this the best European sort tested. It is valuable for home as well as market purposes.

The Keepsake plants are poor, small and unsatisfactory with short, thick canes and a small amount of light green, badly diseasel foliage. Both the mildew and anthracnose seriously attack the foliage, and the mildew practically ruins the fruit. The plants are fairly productive, but the fruit is very uneven in size and development, making a very unsatisfactory variety.

The Lancashire Lad has a medium-sized plant with short, stiff erect canes and a fair amount of dark green, practically healthy foliage. The plants are moderately productive, but the fruit is always more or less injured by the mildew, thus making it unsaleable. The berries are variable in size, have a thick, heavy, dark red skin and are of fair quality, ripening about the 15th of July. It is not desirable.

The Portage is a medium-sized, open, spreading plant with good, short strong canes and an abundance of dark green, healthy foliage; the plants are very productive and the fruit ripens about the first of August. The berries are very large, even in size, of a light green color, having thin, tender skins, and an excellent flavor. It is one of our best all around sorts for both home and market purposes.

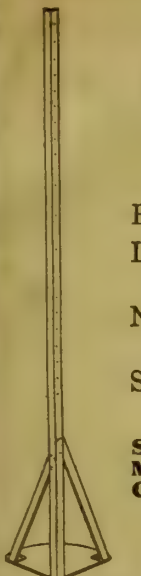
Among the American varieties, the Carrie is a very hardy, large-spreading plant, with strong spreading canes, and an abundance of fine, dark green foliage entirely free from both mildew and anthracnose. The plants are very productive and the fruit is free from disease, ripening about the 23rd of July. The berries are medium sized and of a light, green color, thin, tender-skinned and of excellent flavor. This is a very valuable variety for unfavorable localities.

The Downing is a very strong, free-growing plant, with long, fine canes and an abundance of healthy, dark green foliage. The plants are very productive and the fruit is free from all kinds of disease. The berries are medium-sized, of a light green color, tender-skinned and have an excellent mild flavor. It is one of the most popular and most widely-grown varieties, and is valuable for both home and commercial purposes.

The Houghton is a very large, rank-growing, thrifty plant with long, slender, recumbent canes and an abundance of healthy, dark-green foliage. The plants are moderately productive, and the fruit ripens about the first of August. The berries are medium-sized, thin-skinned, of a clear, green color, and have an excellent brisk, acid flavor. It is one of our standard American sorts, but too small-fruited for general commercial planting.

The Josselyn (Red Jacket) is a large, strong-growing, spreading plant, with long, recumbent canes and an abundance of fine, healthy, dark green foliage. The plants are very productive, ripening their fruit about the first of August. The berries are medium-sized, of a light green color, and have a thin skin and a very mild, pleasant flavor. It is one of our best American sorts for home and commercial purposes.

The Fresno Republican reports dried peaches selling at 4¼ cents.



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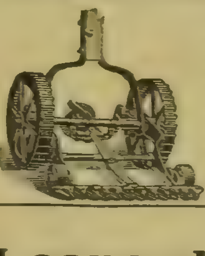

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California Cultivator

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Successful Co-operation.

The result of the first year's work of the Ventura bean men is the perfecting of a stronger and better organization for the coming year. The board of directors has been enlarged as to scope of country covered, and Orange county, Los Angeles county, and Ventura county, will all be represented now in the membership. It has been decided to have but one pool this year as against three last. The same manager will continue at the head of the organization.

Millions Annihilated by Forest Fires.

The awfulness of the fires which have been devastating Idaho, Montana, Oregon, Washington and portions of British Columbia, during the past three months, cannot be appreciated by those out of touch with the situation. The fires extend over hundreds of miles, and for other hundreds of miles the choking, sickening smoke has made life almost unbearable. Touching upon this great disaster and its lessons, the Spokesman Review of Spokane gives the following editorial:

"Fire is a good servant, but a bad master.

"The forest fire illuminates the platitude with terrible light.

"For three months already the lurid flames of burning forests, farms and homes destroyed, human beings and animals cremated alive, the soil itself consumed in places and wealth to the amount of millions annihilated, have darkened the timberlands of the country.

"If any argument were needed in behalf of conservation of natural resources, it would be supplied by the appalling losses caused by these fires. They also form an additional proof of the value of the federal forest service and of national conservation, for the mischief is not confined to the limits of a state or of several states, but affects the resources and waterpower of the whole nation.

"The drouth renders it incumbent on every one to exercise especial care when in the woods. The smoker should consider himself under special obligation not to let a single spark of living flame fall to the ground. The cigar, the pipe, the cigarette should all be dead before they are thrown away or emptied. The camper should soak the soil around his fire, as well as the fire itself with water. One spark, one dry leaf or twig and one breath of air to fan the tiny flame are all that are needed these days to start a forest fire.

"Make it a matter of personal pride no less than of civic responsibility to be a fire warden unofficially, and to prevent this needless destruction of private property and public resources."

Well Said.

An editorial, "The Ferment in the West," in the August Century judges Western conditions and Western ideas so correctly that we quote from it:

"The West does not like to be patronized. It resents that kind of well-being which is benevolently allowed it as an overflow of the profits of great capital. The theory of some in the East that legislation should be so molded and government, so conducted as to give the highest possible activity to big corporations, is treated only with scorn in the West. There they say that they would prefer less prosperity with more manliness and a truer equality before the law. They want the quickening impulse to come from themselves rather than have it thrust upon them from the outside, even by men who may be as wise as they are powerful. They wish no interference of Eastern corporations in Western state or municipal politics. It is, in a word, the defiant and swelling assertion of the right of the governed to have full voice in their government that is the dominant note in all this Western outcry. It is a revolt against privilege in legislation, whether national or local, and a determination to make an end of it."

Farmers Institutes.

Farmers institutes under the direction of the State Experiment Station, and conducted by J. B. Neff, will be held in Ventura county at Simi, August 18; Nordhoff, August 19, 20; Mound, August 24, 25; Fillmore, August 26; Santa Barbara county; Carpinteria, August 22; Goleta, August 23.

The Cultivator is given a private hunch that before many weeks there will be held in Los Angeles or some central Southern California point, a convention which will cover several days and before which there will be discussions of great importance to agriculturists. Definite arrangements are not completed and announcement will possibly not be made for a few weeks yet.

Getting Together.

The request of Secretary Tiede of the Orange County Dried Fruit Association in last week's Cultivator for information, should bring out a hearty response on the part of all holders of dried apricots. Of course there have been mistakes made by people insisting on big prices and refusing to sell until prices came up to their standard, but more often the mistake is the other way. Orange county growers, almost to a unit, are insisting on having their just proportion of the returns on dried cots. It is to be hoped this movement will not only be unanimous in Orange county, but that it will extend to various apricot growing sections. This will be greatly facilitated by giving to Secretary, A. C. Tiede, Santa Ana, the information he desires as to the output in different sections of the state.

Citrus Growers Meeting.

We have received from E. O. Essig, horticultural commissioner of Ventura county, notice for a meeting at Santa Paula next Saturday afternoon, July 30th, to look more thoroughly into the matter of fumigation. Regarding the meeting, Mr. Essig writes:

"It is absolutely necessary for every citrus fruit grower, sometime during the life of his orchard, to fumigate. Every year thousands of dollars are regularly expended by the growers of this county for this purpose. A great deal of the work done by fumigators is ineffective, unsatisfactory and unprofitable. In consideration of these facts, I deem it necessary that certain fundamental principles governing fumigation should be adopted and adhered to by all, so that more efficient work may be had by the growers."

Our live stock subscribers will note that Mrs. Sherman is again with us with one of her chatty articles, after an absence of a few weeks caused by illness. Mrs. Sherman is not entirely well, but we are glad to know is convalescing to the extent of being able to give her bright and cheery letters to Cultivator readers. Her great fund of information and readable way of presenting it make her writings more attractive than the average live stock matter. We hope Mrs. Sherman's health will permit of her regular work in the near future.

The Third National Good Roads Congress is meeting in Niagara Falls this week. It is expected that delegates from every state in the Union will be present at this conference. It is probable that representatives of the automobile and manufacturing interests will predominate, but the rural interests will also be a great factor in the discussions. The meeting is held in New York State in part because of the great interest manifested there in the subject of good roads and the recent appropriation of $50,000,000 for road construction work.

The "spell of weather" which was given to the inhabitants of the Pacific Coast last week has given them a taste for a few days of Eastern conditions for many weeks. For the first time in years California reports deaths from heat, that is excepting cases of exposure on the desert without water. Fortunately this condition where great humidity combines with intense heat seldom prevails.

We are informed that the Orange County Dried Fruit Association is winning in its fight for fair returns for this season's apricots, and contracts were made on Monday for cots at ten cents, which is the minimum of the association. Many of the members are holding for the full twelve cents and some predict that fifteen will yet be secured.

Irrigation of Orchards is the title of Farmers Bulletin 404 of the Department of Agriculture. It is written by Samuel Fortier, Chief of Irrigation Investigations, and contains many valuable suggestions on irrigation.

Pleasant surroundings and modern conveniences, easily obtainable, will go a long way in keeping the boys and girls on the farm.

Agricultural News Notes of the Pacific Coast

Northern California

It was warm.

The Sebastopol apple show will be held under canvas.

Shipments of early grapes have begun in Sutter county.

The new cannery at Suisun, Solano county, started last week.

Winters, Yolo county, is shipping nutmeg melons to the North.

Pomona Grange of Sonoma county met in Santa Rosa last week.

Nevada City, Nevada county, reports its big forest fire under control.

Some watermelon crops have been injured by the heat of the last few days.

Plumas county is extending its good roads to the mountain summer resorts.

Healdsburg, Sonoma county, has a new fruit packing and shipping house.

Oroville, Butte county, claims the biggest rock crusher in the United States.

Red spiders are doing much damage to hop fields in the Sacramento Valley.

The board of supervisors is giving financial aid to the apple show to be held in Sebastopol.

A pear grower at Ukiah, Mendocino county, is receiving $35 per ton for his Bartlett pears.

Rescue, Eldorado county, reports a new weed pest taking the fields and especially the roadsides.

Secretary Crane of the Oroville chamber of commerce is asking for fruit for exhibit purposes.

Evan Kelly has been made acting supervisor of the El Dorado forest reserve in Nevada county.

The University Farm at Davis has been short on water because of a breakdown of the pumping plant.

It is reported that Libby, McNeil & Libby will construct another milk condensing plant in Humboldt county.

The creamery located at Ukiah, Mendocino county, is proving profitable to the farmers. It is a home institution of which the people are proud.

The Western Pacific has put a train load of fruit from Sacramento into Salt Lake City in 35 hours and 45 minutes. The average time heretofore has been 72 hours.

The Advisory Committee of Sacramento county which with the County Board of Supervisors has had charge of road construction in that county, fears that too much oil has been used on some roads and that they will not be permanent.

The baghouse recently installed at the big smelter at Kennet, Shasta county, has proved insufficient to handle the smoke from four furnaces, and two furnaces are laid off until improvements can be made in the appliances.

Quite an industry has developed near Suisun in the shipping of tule hay to San Francisco. It is used largely in glass works and potteries for packing purposes. The price this year is $6.50 per ton, but it formerly sold at about $8.00.

Central California

It was warm.

The grain harvest of Kings county is well toward completion.

Turlock cannery opened on Tuscan cling peaches last Monday.

Santa Clara Valley hay crop promises to be exceptionally large.

Prices of Valencia oranges are very satisfactory to Tulare county growers.

Turlock is objecting to her cantaloupes going out in Imperial Valley wraps.

The San Jose Grange proposes to observe a Prune Day for the Santa Clara Valley.

Turlock reports melon prices up and down, varying from $8.00 to $16.00 per ton.

The veterinarian of Fresno county reports progress in the tick eradication campaign.

Monson, Tulare county, has sent 16 cars of melons to market. One grower netted $75 per acre.

Some growing oranges have been injured by lime-sulphur spray used on thrips in Tulare county orchards.

Apricot growers of the Santa Clara Valley are holding their dried fruit and refusing to accept offers of buyers.

Nearly 10,000 sacks of grain were purchased by one buyer from small producers in Porterville in one day last week.

Julge Venn of Fresno has been secured to put the ribbons on competitors in the next Santa Clara Valley poultry show.

The state veterinarian has discovered Texas fever tick on Hereford cattle recently shipped to Galt, Sacramento county.

The Stockton Cannery of the California Fruit Canners' Association began its season's run July 13th. It will employ about 400 hands.

Kerman, Fresno county, is having trouble on the water question, one party having been arrested and fined for tampering with canal headgates.

The board of directors of the Turlock and Modesto irrigation districts recently held a conference with congressmen and discussed matters pertaining to mountain reservoirs.

The raisin crop will be somewhat affected as to seedless and smaller varieties which were burned by the heat earlier in the season, but the muscats are promising fair crop.

At a recent meeting of the horticultural commissioner and his deputies at Visalia, Tulare county, report was made that great damage was being done to fruit, especially peaches, by squirrels.

It is estimated that the tonnage of dried apricots of this state will be 14,000 to 15,000 tons. The San Joaquin Valley growers are reported to have sold quite largely around the 8½ cent mark.

An expert of the Bureau of Entomology contradicts an early report that spraying for thrips had injured many young oranges by causing blistering. It is not yet determined what caused the trouble, other than sun heat.

Southern California

It was warm.

Shipping of grapes from the Coachella Valley has been closed.

San Marcos, San Diego county, is shipping great quantities of hay.

Persian varieties of grapes have been found to do well in the Coachella Valley.

Baldwin Park, Los Angeles county, has been shipping four cars of potatoes daily.

A test is being made to determine possibilities of by-products from cull cantaloupes.

Shipments of hay from Auld, Riverside county, are much lighter this year than last.

Escondido is making extensive preparations for observation of "Grape Day" on September 9th.

Petitions are being circulated in the Imperial Valley asking for the formation of an irrigation district.

Placentia will soon have under construction six new packing houses for handling the coming orange output.

Santa Barbara county is contemplating the establishment of ten free Library stations throughout country districts.

Oranges have been selling as high as $7.00 per box. Lemons are not so high as a month ago.

Many thunderstorms have occurred on the desert within the past two weeks, damage being done in some sections.

Forest fires in Lytle Creek Canyon, San Bernardino county, have caused much damage. They have been traced to careless hunters.

San Bernardino has a flowing well above the Lytle Creek Reservoir which is now producing in excess of 120 inches of water.

One of the newer varieties of watermelons known as the Angeleno is reported from the Coachella Valley as doing exceptionally well.

State Forester Homans made a trip of several days through the eucalyptus plantations near Escondido and Encinitas, San Diego county.

Escondido found its stock shipments so extensive on one day last week that a special train was required to move them to market.

Imperial Valley has tried the experiment of shipping melons loose in cars piled on straw which saved about $200 per car for crating. It proved fairly successful.

A number of orange growers at Rialto, San Bernardino county, have formed a co-operative packing and marketing organization, though it is reported it will be independent of the Exchange.

Filing has been made on 70,000 inches of the waters in the Hog Lake Canyon, San Jacinto mountains. The water is claimed for mining purposes and for the irrigation of the upper Hemet Valley.

Orange growers at Rialto, San Bernardino county, have formed a Protective Association which will look after the best interests of the orange groves with especial attention to protecting from inroads of insect pests.

The Coast

It was warm.

At a Jersey sale at Portland, Oregon, one heifer commanded $435.

Binders are just starting on their run in Lynn county, Washington.

The recent rains did extensive damage to curing alfalfa hay in Arizona.

Hop growers near Salem, Oregon, are generally spraying for the hop louse.

The Portland Fair will begin Monday September 5th and continue till the 10th.

A North Yakima hop grower has just sold his 80 acre hop yard for $75,000.

Dry land alfalfa at Wilson Creek, Washington, is yielding two tons per acre per cutting.

Large extensions of the rubber forests of Mindanao, P. I., are being made by planting.

The Roosevelt Dam in Arizona was the means of saving many crops in the Salt River Valley.

Wool sales of eastern Washington are much more satisfactory and moving with more rapidity.

The Colorado State Stock Growers' Association held its annual meeting at Grand Junction last week.

The rich delta lands along the Colorado south of Yuma, Arizona, have been purchased and will be subdivided.

Potato bugs are causing vast damage to farmers throughout Nez Perce Prairie and Clear Water Valley in Idaho.

Intensely hot weather combined with drouth causes great damage to grain growers and all farmers of eastern Washington.

The Beartooth National Forest in Montana is offering every possible aid to sheep men who are losing sheep because of the drouth.

The agricultural experiment station at Pullman, Washington, is making extensive experiments in feeding cows on green peas and oats.

The state experiment station has investigated the matter of grain smut at Palouse, Washington, and finds that smut blowing over the fields will spread the infection.

Northern Idaho and southwestern Montana have suffered under the greatest and most destructive forest fires in the history of the Northwest. Many people have lost their lives.

The Coconino National Forest of Arizona, will be divided into two reserves, one known under the former name and the other with headquarters at Williams known as Tusayan Reserve.

Owing to contention over the rating of Winesap apples at the Spokane Interstate Fair, also at the National Apple Show, apple growers at Wenatchee, Washington, refuse to make any exhibit at either show.

The Farmers Unions of the Inland Empire have united and formed a district which will maintain an agency at Walla Walla and sub-agencies in other towns of eastern Washington. The principal activity of the organization is the handling of wheat.

Coulson's
EGG FOOD

If you were going to erect a large building, you would consult an architect—if you wanted some legal papers drawn up, you would go to a lawyer—because these men have made a special study of their respective professions.

The same principle applies to the feeding of your chickens. Presumably you have not the machinery or formula for making an egg food so that it will be just what your hens need.

That's why you should buy COULSON'S EGG FOOD. It is the result of years of study—it is scientifically mixed by experts with the right proportions of the various ingredients to give a balanced ration.

COULSON'S EGG FOOD means a healthy stock, with great laying power and eggs of quality. Saves you the time of mixing—provides a better feed—makes more eggs—means more profit, as COULSON'S EGG FOOD more than pays for itself, through making hens lay to their full capacity.

It is especially advantageous to use it at the present time, when the price of eggs is beginning to increase, and when also you are anxious to have your hens in good condition for the molting season.

Hens eat only what they like, but there are many foods they must have, and which must be mixed with their regular food so that they get the desired quantity. The only way the food can be mixed is by improved machinery—that's why you should feed COULSON'S EGG FOOD.

Get it at your dealer's; anyway send for our Catalog which tells about the familiar Coulson Products and gives valuable information about Poultry Raising.

Coulson Poultry & Stock Food Co., Petaluma

Germain Seed & Plant Co.,
Distributing Agents for
S. California

LEE'S GOODS
Insure Success

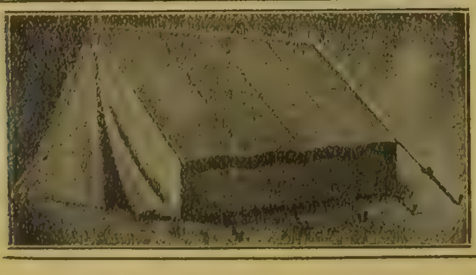
Lee's Lice Killer sprayed on the roosts and walls of the house twice a month during warm weather will keep all lice off your hens.

Lee's Egg Maker fed regularly during the moulting season will do more to keep your hens vigorous than anything else you can use. Your hens will lay while moulting, get new feathers rapidly and the fertility of the eggs will allow you to hatch the chicks early in the fall.

Lee's Germozone used twice a week in the drinking water is a very valuable preventative of colds and other chicken troubles.

The Mandy Lee incubators and brooders are built on correct scientific principles, and both the egg and the chick get exactly the right conditions to produce very strong birds. Our machines are easy to handle, the directions for running are very complete, and they are not apt to get out of order. Write for catalog and any other information you want.

Geo. H. Lee Company
225 W. 2nd Street - Los Angeles, Cal.



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Profit in the Poultry Yard

We solicit short articles of a practical nature from the fancier and utility breeder, giving their experience with poultry. All inquiries pertaining to feed, management, disease and its prevention will be answered through these columns.

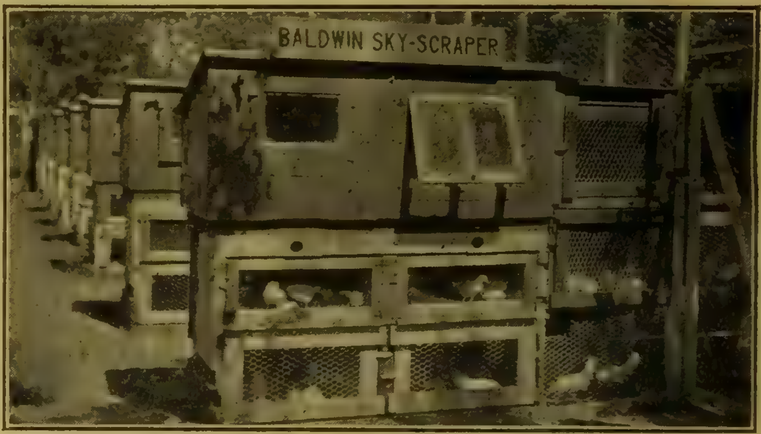
CHICKS THAT TEACH THEMSELVES TO ROOST.

By Frank E. Baldwin, San Jose.

OF the many perplexing problems to discourage the beginner in poultry raising it seems to me the question of teaching incubator chicks to roost, is one of first importance.

It took me some years to find out how to arrange things so the chicks will teach themselves to roost without injury to each other and without loss. During the time I was learning the scheme I lost a lot of chicks first and last by crowding and smothering, but now we never think of the roosting proposition except when asked for information.

So many ask me how I teach my chicks to roost and are so much interested in the fact that they teach themselves, that I will try and explain it here for the benefit of others.



My attention was first attracted to the fact that chicks from a week to ten days old were hopping up on top of the hover in the brooder and that they were inclined to remain there for a while and later would roost there all night. It occurred to me that a lath placed an inch higher and an inch and a half in front of said hover might encourage the chicks to try it for a roost. I found they would hop onto this lath roost, but would not stay long at first, but as they became accustomed to it would stay longer and soon roost there over night—that is a few of them would.

Then I put other roosts of lath each a little higher than the other and a little way apart, making steps easy for them to climb to encourage them to try. Little by little some would find their way from the bunch on the floor to the roosts till all were filled.

Referring to the cut, will say I use the Model Colony brooder with a six-foot extension, the front of which is one inch mesh wire. Under this commercial brooder I have constructed a secondary brooder of my own design, with lamp heater similar to the one in the upper brooder.

In the upper brooder the heat is confined to the left hand compartment or just one-half of the upper brooder, while in the secondary brooder the chicks have the whole length heated, giving them twice the room.

We sun the chicks for three or four weeks on the top floor and then put them down stairs where they remain as long as they need heat.

In the top brooder the roosts, three in number, run from left to right in the left hand compartment parallel with the roof and about six inches from said roof. In the secondary brooder the roosts also run from left to right the whole length of the brooder. The chicks many of which have learned to roost up stairs will go on the roosts down stairs to about one-fourth the total number the first night and then each night more will go up until the end of the second month when all will be roosting.

When the chicks first go down into the secondary brooder they are confined to that floor for a day to get them to feel at home, when they are left down an incline to the ground. After this they run up and down at will.

When the chicks are two months old they are driven into another yard through a small gate and into a small open front house with roosts eight inches from the ground with gunny sack over most of front in bad weather. Then they go to roost and we never look at them after driving them into the house the first night, as the roosting habit has been formed and most of them will roost the first night and the rest soon follow.

After driving chickens out we clean and spray the secondary brooder and bring down the chicks now three or four weeks old from the top floor, clean and spray the top brooder and put in another hatch from the incubators, thus having an up-to-date continuous performance.

The fact that no time or thought is given to teaching the chicks to roost makes it possible to take care of more chicks and saves a deal of nervous wear and tear.

POULTRY QUERIES.

Rheumatism—Bumblefoot.

One of our toms has swollen feet. He seems well in every other way. Please give remedy through the Cultivator.—A. L. S., Imperial.

This query has been mislaid, but as the symptoms are so meagerly given, it is rather difficult to suggest a remedy. If the feet were feverish and the bird seemed very lame, one would suspect rheumatism, and in that case a good liniment would be in order, while a purgative would be helpful to drive it out of the system. If it is bumblefoot and the swelling seems to contain pus, open the swelling and remove all the contents possible, then wash clean and dry, after which a dressing of camphor salve, as described in Cultivator of April

21st, should be freely rubbed in and the foot bandaged so no dirt could work in. It's a slow disease to cure, and the wound should be cleaned once each day and all pus and foreign matter removed, but if the bird is worth saving, it can be saved if one takes the time and trouble to do it.—Mrs. Frank Metcalf.

Cannibalism.

Have had trouble with cannibalism among my young Minorca chicks. Has any other reader had trouble that way? What can be done to stop it? What is the cause?—W. C. B.

Cannibalism among young chicks is caused by their natural desire to get into mischief as much as anything else, and the best way is to give them something to do to take their attention from each other's toes, etc. One way to help this, is to give them lots of litter to scratch in, and another good way is to hang up pieces of fresh meat, so they will have to jump for a bite of it. Suspend pieces of meat on strings and as it wobbles around, they will have all they want to do chasing it, and will usually let each other alone. The meat also attracts flies, which they try to catch, but it must not be allowed to hang until putrid, of course, but be replaced with fresh pieces every day. In a flock where 1000 were being raised, this vice became very troublesome, and the care-taker refused to use chaff, preferring sand floors, but the pieces of meat acted like a charm, and he had no further trouble after trying this treatment. A gopher cut into small pieces, is just as good as any other meat providing the gopher is caught in a trap or shot, not poisoned. A fresh head of lettuce may be suspended in like manner, but it seems the meat is what they crave, and is by far the best.—Mrs. Frank Metcalf.

Care of Chicks.

Just three weeks ago I bought forty incubator chicks. On the fifth day I fed them a small saucer of clabbered milk and did for two days following. Then I noticed slight bowel trouble in several, so of course stopped the milk. The next day three died and others have died sudenly since. I have fed nothing but chick food (with a little wheat mixed in this week) and they have had fresh water in clean dish before them always. At noon I give them lettuce. Their box always has fresh, clean straw at night. I have a fireless brooder for them. What can I do to save the rest?—Mrs. N. C. C., Los Angeles.

I am inclined to believe that the clabbered milk so upset their digestions that it caused a sort of chronic indigestion. Also the hot sun is very trying at this time of year. Had you opened the first ones to die, I believe you would have found a hard, cheesy substance which clogged the digestive tract, allowing nothing else to pass through, causing them to die from stoppage of the bowels, perhaps. Watery matter might have been evacuated all right, but nothing solid could have gone by, if my theory is the correst one. It is akin to cholera infantum, the principal cause of that being sour milk which curdles into a hard cheese stopping the intestinal tract. For the rest, be sure that they have plenty of grit or very coarse sand. Then give each one a dose of Epsom salts which is best done by putting a teaspoonful into a pint of water, and giving them no other drink. Then toast bread until charred, and soak it in limewater. Mix a raw egg with wheat bran and add for their chief feed until they are better. I hope this will help save the balance.—Mrs. Frank Metcalf.

Bumblefoot.

About a month ago some of my hens showed swollen ball on the bottoms of their feet. The swelling keeps getting larger and has black spot in center. Hens are large and in good condition and seem to scratch and walk as well as ever.—V. L., Gridley.

This is bumblefoot, and we refer our subscriber to Mrs. Metcalf's answer to similar query on preceeding page.

It is possible the roosts are too high and the heavy hens have their feet bruised by jumping to the hard floor. Lower the roosts if possible.

GAPES.

With the coming of the little chicks come their enemies also, one of the worst of which in some sections is the gape worm producing gapes. Many who do not know the cause cannot understand any method of cure. The following by one of our best authorities on poultry troubles may help some of our readers to avoid loss:

A bird suffering from the gapes is easily recognized, as it stands extending its neck, frequently yawning or gaping; a wheezing cough is sometimes noticed, and when there are many worms present the bird will froth at the mouth. If not attended to, the bird will become suffocated and die.

In and upon all warm-blooded animals and birds there are two distinct forms of parasites to be found, the animal and the vegetable. The most troublesome of the latter parasites is "ringworm." From the name one would suppose it was due to a worm, but this is not the case, but to a minute fungus. The disease known as favus, affecting the combs of fowls, is also due to a vegetable parasite. The disease occasioned by the former form of parasite, the animal, are many, the most common, as far as fowls are concerned at any rate, being gapes. It mostly affects birds from one to six months old, although as already stated, older birds are liable to it. Gapes is due to the presence of animal parasites in the throat of the bird, which are termed syngamus trachealis, or to game keepers the red or forked worm. On examining the trachea and bronchia of a bird showing these symptoms, from three to a dozen, and perhaps even more, small red worms will be seen. These are forked shaped, though sometimes straight ones are noticed. The former of these are the copulating males and females. The males are considerably smaller than the females, and are attached firmly together, so much so that they can not be separated without tearing the tissues. The ova of the female contains fully-formed embryos, which escape by the rupture or the decay of the parent. They hatch in damp earth or water in from one to six weeks, according to temperature. When they are swallowed by the bird they develop into adults, and are able to reproduce in their turn in less than three weeks' time. No second host is required. The embryos are able to remain alive in the alimentary canals of earth-worms, and this is one way of the disease spreading.

Perhaps one of the most important points in connection with the care of gapes is that immediately a bird dies it shall be burnt and not merely buried in the ground, as is often the case. As will easily be seen, if the bird is thus treated the parasites are allowed to breed, which they do quickly, and the worms come up to the surface of the ground and are eaten by the chickens. Therefore, as a precaution, always burn the bodies of birds that have died of this complaint. There are many remedies and cures for this disease, if it may be termed thus. One of the oldest, but at the same time one of the most efficacious, is that of soaking the grain in urine before giving it to the birds. The ammonia escaping from the urine proves fatal to the red worms and their embryos. Another old method, but a good one, is that of inserting a feather down the throat of the bird, a feather that has been previously dipped in paraffin oil or turpentine. When down the throat it should be given a sharp turn, and then drawn quickly out, and frequently some of the worms stick to the feather, and are thus extracted.--Rural World.

Overfeeding is occasionally responsible for soft shelled eggs. When hens are overfed they grow fat, which prevents the eggs shelling properly. Wheat, oats and corn contain a goodly percentage of lime, while it must not be overlooked that weeds and grasses, when young and tender, contain lime, and hens if allowed to run in the field will soon recover and secrete their lime supply from various sources. Another cause often overlooked is that hens of a prolific strain produce eggs too rapidly anyway, and should not be fed any stimulating feed, as nature can't keep pace with the eggs. They do not remain in the oviduct long enough to be shelled. Again, this is caused sometimes as a result of allowing too many cocks with the hens, which should be prohibited in some way. Only use the cocks when breeding your hens. Also, I have known frights from dogs, etc., to be the cause of non-shelling of eggs."

Don't let your fowls get all run down during hot weather and molting time, but keep them in good condition.

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tells you how. It is free. Send for it. Send us addresses of 5 persons in your vicinity who have fowls, and we will send you postpaid, an Anchor Egg Separator. For 20 addresses, we will also send The Poultry Manual, a book well worth 50 cents.

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See Announcement on Page 91

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Bees and Their Care

HONEY CROP CONDITIONS.

THROUGH courtesy of Mr. B. G. Burdick, President California State Bee-Keepers Association we have received copy of estimate of this year's honey crop, gathered by the Colorado Honey Producers Association. The association has spent some weeks in gathering and compiling the report from which the following summary is taken. It presents an excellent review of the conditions in bee-keeping seotions of the entire West, giving locality, character of honey flow to July 1, 1910, prospects for balance of season, and quality.

Colorado.

Denver and vicinity, very light, poor unless rains come soon.

Northern Colorado.

Port Lupton, nothing, poor on account of grasshoppers; Loveland, steady and fairly good, fair, quality O. K. Greeley, poor, very poor, good quality; Platteville, very light, none. Timnath, heavy last week, not good unless plenty of rain. Boulder, hardly enough to keep breeding up to desired limit. Longmont, poor, not good.

Platte River Valley.

Weldona, none so far, unfavorable. Merino, none, very poor. Sterling, none, very poor.

Arkansas Valley.

Canon City, none, not encouraging. Las Animas, good, good, quality the best. Rocky Ford, good, good, good. quality. Olney, up to standard, very good, fine quality. Olney, up to standard, very good, fine quality. Ordway, too cold up till ten days ago, since then good, fair, A No. 1 quality.

Southern Colorado.

Hoehne, very limited, small crop. La Veta, just got up in supers, need rain to make prospects good.

Western Slope.

Montrose, good, not very good. Crawford, flow just beginning, prospects poor account of dryness. Delta, good, fair, fine quality. Montrose, not very good, good for average crop. Grand Valley, light, very good, quality very good. Grand Junction, very good, good except for grasshoppers, very good quality. Mancos, scant, very poor unless rain comes, not very good quality.

Nevada.

Yorington, medium, doubtful, some honey dark on account slow run. Wabuska, starting in good, fair, very good quality. Smith, very small, fair, very good quality.

Wyoming.

Wheatland, none until last few days, poor. Douglas, none, very poor. Lander, prospects good, sweet clover and alfalfa honey.

Utah.

Huntington, just commencing, good, very fine quality. Ogden, very little from first crop alfalfa, good as usual.

Oklahoma.

Maysville, good, good, very fine quality.

California.

Redlands, orange flow good but short, prospects one-fifth crop, good quality. San Marcos, nearly entire failure, none to store, light amber quality. Colton, light, unfavorable. Lassen county, good, good, good quality.

New Mexico.

Belen, very poor, very poor, good quality. Albuquerque, good, good, unusually good quality. Mesilla Park, no honey taken off as yet, poor.

Idaho.

Nampa, very good, good, good quality.

Montana.

Billings, fair, good, good quality. Rancher, steady and heavy, good, first class quality. Miles City, none, poor.

Kansas.

Hutchinson, not very good.

Oregon.

Dell, good, very good, better quality than usual.

CENTRAL CALIFORNIA BEE NOTES

The dreaded black brood, European foul brood, that has been so destructive in Fresno county for two years past, has not yet been reported in Merced or Stanislaus counties. But the American foul brood has gained a strong foothold in all the counties of the valley.

Bees wintered well, but an unusual spring has been unfavorable to the bees as the usual early flowers did not yield the usual nectar, and many colonies were reduced to mere nuclei by the twentieth of May. By the first of June the nectar was more plentiful, but colonies are weak with but very few swarms for the season.

The famous Turlock Irrigation District canal was placed out of commission early in May by a bad break that took weeks to repair with a large force of men and teams. This deprived the farmers of water for nearly six weeks which means short crops, and the bee-men, incidentally, suffer their share in the matter.

With a generally short fruit crop over most of the eastern states the bee-men of California look for higher prices on honey than for some years past.—J. G. Gilstrap.

CONCERNING NOTICES.

We have received from Bee Inspector Gilstrap of Stanislaus county blanks of notices which he serves on apiarists of his county. As he suggests, the printed form adds somewhat of dignity to the serving and inspires more respect for the notice. Many inspectors simply serve verbal notice which the careless or indifferent apiarist regards lightly. For the benefit of others who may wish to use a regular form, we give the blank notice which Mr. Gilstrap serves. These blanks are bound in book form with stubs containing in the main blanks for same information which is on the notice.

Notice of Inspection of Bees. From Inspector of Apiaries.___________1910. You____are hereby notified that in accordance with the statutes of the State of California relative to inspection of bees, which provides that all bees that are in boxes or immovable frame hives within a radius of three miles of any apiary infected with "foul brood" or other infectious or contagious diseases, shall be, on the order of the Inspector of Apiaries, transferred to movable frame hives or be burned. You____are therefore notified that such disease exists in_____ apiary within three miles of your bees. You are obliged to transfer all such bees ______ boxes in number, to suitable frame hives, on or before _________1910, and that none of such bee hives shall be moved from present location until so transferred and inspected. * * * You______are hereby notified that all hives of bees in your possession_____infected with infectious or contagious diseases shall be properly treated by you within five days after this notice is served on you; or said infected hives, combs and bees will be burned by the inspector.—Inspector of Apiaries.

Coachella Valley fig trees have proved very profitable this season.

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General Agriculture

HIGH COST OF LIVING.

I BELIEVE that one secret of the high cost of living is explained by the fact that a few years ago ships from this country to foreign countries carried only flour, whereas today we are shipping millions of bushels of wheat. This removes from our country some hundreds of thousands of tons of middlings and bran, or in other words reduces our beef and pork producing capacity and likewise affects cheese, poultry, eggs and other products. This has also given to our foreign competitors greater producing power along the same lines. It may be said that the foreign trade does not take all of our bran and middlings from us, but it is taking sufficient to make the rest sell at exceptionally high figures. I have seen beef selling on foot at 2½ cents and pork at 4½ cents, but it cannot be produced today at any such figures, especially when we have to pay 1½ cents per pound for feed, as it takes about seven pounds of feed to make one pound of beef or pork.

There are other factors in our high cost of living but I believe this is the chief of them.—W. S. King, Santa Ana.

UTILITY OF GOOD ROADS.

(Continued from Page 75.)

on which the solution of the problem of the high cost of living depends. It may be taken as a general proposition that there is not one of the beneficial effects mentioned above as resulting from the construction of good roads, which is not increased many times by the invention of the motor car. If good roads increase the value of farm lands, good roads plus the motor car tend to increase their value still more. If good roads reduce the cost of living and bring back population to the country districts, curtail the power of the middleman and increase the power of the farm, each of these ends can be achieved more quickly, more certainly and to a greater degree with the aid of the motor vehicle.

From the viewpoint of the road engineer, the necessity for a central system of supervision of road construction is clear. Mr. Logan Waller Page, Director of the Office of Public Roads, United States Department of Agriculture, who with a merely nominal appropriation of $114,240 annually at his disposal is doing technical and educational work of the greatest importance to the road systems of the country, says:

"Road building is an art based upon a science. In this age of specialists, it almost surpasses belief that the American people, so practical in all other lines of endeavor, should permit their golden millions to be frittered away by men who for the most part know little or nothing about either the science or the art of road building. There are today more than one hundred thousand petty road officials in the United States, each and all receiving compensation. Very few of these men devote more than a fraction of their time to road work, because their interests lie elsewhere and their compensation is too small to enable them to devote their entire time to the work. It is not surprising that a century and a quarter of this kind of supervision has resulted in the present chaotic condition of our public roads. The reforms that should take place will provide a comparatively small body of trained, competent road builders, devoting their entire time to continuous road work."

It is estimated that $40,000,000 of the $80,000,000 at present annually spent in America on roads might as well be thrown into the sea. With a system of scientific Federal supervision like that of the Department of Bridges and Roads in France, this vast sum could not only be saved, but be applied with treble efficiency.

It must be remembered that the construction and maintenance of a modern highway presents from the technical side a more difficult problem than the construction and maintenance of a railroad. What great railroad system would delegate the duty of looking after its road bed to the communities through which it passes, or would think of having a separate track maintenance department for each state and county it traversed? In the case of a trunk highway system the call for central administration is equally pressing, as it is impossible to confine within the boundaries of any one State the mileage which shall be treated as a unit under one authority. A state boundary is a political division, with no more real reference to a railroad or a highway than it has to a river.

From the farmer's viewpoint there is, however, one question which arises here. He will say: "What we want is farmers' roads, local roads, market roads. We want to get about our immediate neighborhoods, not to make long trips." The answer is that when the Federal government constructs the main post roads the state is left free to construct the county and local roads. As Mr. Page says in this connection: "Classification, which is a prominent feature in all of the leading countries of Europe, contemplates the character and extent of improvement exactly adapted to the needs of traffic on each road." And, again, "The first work to be done on the roads themselves is their classification."

One word in conclusion—While the growing use of the motor car in the country districts and the systematic improvement of our country roads will be of incalculable benefit both to the farmer and to the nation, there is an abuse both of the motor car and of the roads which all must unite in suppressing, and that is reckless driving. The law abiding car owner has no use for the speed fiend because he brings automobiles into disrepute. The manufacturer has no use for the speed fiend because the resulting abuse of the car depreciates it and the maker gets the blame. The roadmaker has no use for the speed fiend because it is the abuse of the roads by the motor vehicle and not their proper use which tears them up. The public has no use for the speed fiend because he is a common danger to life and limb. By force of public opinion, by education, and if need be, by drastic penalties, he must be eliminated, and the feeling of the farmers in this matter is shared by every right-thinking person in the community. The day of the irresponsible chauffeur is drawing to a close.

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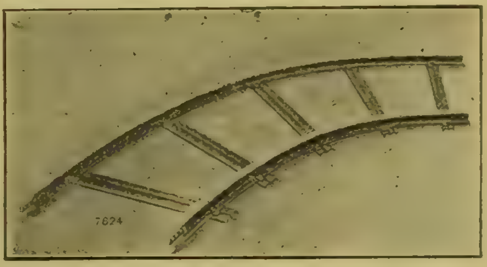

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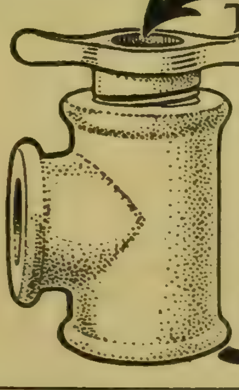
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Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Bitter Cream.

The milk from one cow, or rather the cream, is bitter after standing 12 to 24 hours. She is fed nothing but clean hay and grain. If we succeed in making butter from it, the butter soon tastes and smells rancid. Are drying her up for beef. If she should breed and we kept her till she freshened, would the milk and cream be good?—Subscriber.

There are some things hard to explain. I never knew of a healthy cow to taint her milk through her body except when in a very advanced stage of lactation. Can there be any mistake in this cow's condition? Could she have been bred? If that is not possible, then I should test the milk in the following way: Milk each teat separately, discarding the first couple of streams from each teat. This takes out any bacteria that may be in the outer milk ducts. Set the milk from each teat and see if the usual result follows. The cow's habits should be watched; she may go into dirt that the other cows avoid and in this way make herself a source of bacterial infection, I have had cows that sought out all the muddy, slimy places to rest on in a pasture, while others were always sure to find a resting place, on the clean dry sand. The matter seems to resolve itself into whether it is wise to retain this cow until she freshens and then try her again or if it is cheaper to beef her now and put another in her place. The price of feed must decide this matter.—M. E. S.

Dairy Questions.

Have planted what seedsman's catalogue called amber sugar cane for green feed for cows. Now I am told the second crop causes sickness. Is this so, and if so, why? Is it wise to immediately breed a heifer after the first calving. Heifer is just two years old, calf six weeks. She gives two gallons a day. Is that good for Jersey heifer?—Subscriber.

We have been feeding amber sugar cane or sorghum for twenty-four years without having any sickness from it that was at all mysterious. It will bloat cows badly if they are turned into it after having been on dry alfalfa, but not any worse than alfalfa would do under the same condition. It is well to remember it is a green feed that cows are very fond of and if they are allowed to eat unlimited quantities, until they have become somewhat accustomed to it, they will surely suffer. If one bloats use the same treatment customary for alfalfa bloat.

I would wait two or three months before breeding a heifer this young again. If she is not allowed to grow now she will remain stunted for life. Then too the early education of a heifer to milk for a year is important for it will make her a long milker afterwards for life. Some people breed at once for fear they may fail to again get the heifer with calf. This I hardly think is well founded in fact. It is more carelessness in not watching the animal in time. Now this heifer should be pushed on milk making foods right along to develop the udder and to make her strong for her life work. As to the amount of milk, if the milk is rich it is all that could be expected from so young an animal under ordinary conditions.—M. E. S.

Grape Leaves Dropping.

The leaves on some of the vines in a good bearing vineyard of Emperors turn brown, beginning at outside, and fall off. Then new leaves come out. Some of the vines die in winter. Can you tell me what the trouble is and how to remedy it?—D. B., Fresno.

This may be alkali, lack of drainage, or phylloxera. The description is not definite enough to tell. Write to Prof. Fred'k. Bioletti, University of California. He will send some of his men in the field to examine this vineyard. There are two men now in the field at Fresno that would do this work.—M. E. S.

Knotweed—Joint Grass.

A specimen of weed was sent to this office from Imperial Valley with the remark that it was often called there Devil's Shoestring.

This was submitted to a botanist who says that it is the European knotweed or Polygonum aviculare, a common but not particularly troublesome weed which prefers the beaten roadside or wayside path. It is a decumbent, wiry plant, annual and perennial. It is of the same family as the smartweed, buckwheat and several other plants.

Snakes.

I noticed in a recent Cultivator that a subscriber wished to know how to rid his place of snakes. If his place is fenced, let him turn in hogs. It is said a rattlesnake is better than an ear of corn to a hog.—H. A. Snavely, Wilcox, Ariz.

In addition Mr. J. C. Oestergard of Burbank, Los Angeles county, suggests that if the rancher will eradicate the squirrels on his place this will so reduce the food of the snakes that they will disappear. He also suggests that at this time of the year squirrels fall easy prey to poisoned melon rinds, as the shortage of water makes succulent food very attractive. The strychnine should be judiciously distributed so as not to make the melons bitter. In winter when the grass is green he finds poisoned wheat satisfactory.

PERCHERON SOCIETY.

The Percheron Society of America has, since December 1908, endeavored to induce the Federal authorities to furnish promptly a list of the names and numbers of all horses imported, so as to provide the Secretary with a check list with which to compare foreign certificates sent in for record. June 16, 1910, the Board went still further and urged that the Federal Government provide an inspector at ports of entry, to see whether the horses and foreign certificates agreed ,and submit a report on same, immediately, to the Secretary of the association. The Government has indicated a willingness to do this, but has so far failed to carry out such a plan, and the situation is now such that the Society has found it necessary to make such inspection for identification at its own expense. This will be confined entirely to seeing whether the horses and pedigrees correspond, will be made at the port of entry by a competent inspector employed by the association, and will start at once. The Society regrets the necessity of undertaking work which the Federal Government might very properly do to help the breeders and importers, but until the Federal authorities will take charge of this, the Society must protect itself. In cases when the horses and foreign certificates do not agree, registration will be withheld until the importer straightens matters out. If he cannot, no American certificate will be issued, and the Federal Government will collect duty on the animal in question.

It is interesting to know that 2726 breeders are members of the Society and are transacting all their business with it. Since June 25, 1909, 730 more breeders of Percherons have become members of this association, and new applications for membership are coming in daily.

Veterinary

Answers in this column by Dr. R. T. Whittlesey, are without charge. For immediate mail answer remit $1.00. In writing questions give full symptoms or particulars of injury of animal.

Swelling in Head.

Last week early in the morning I noticed a Jersey heifer sick. Her head and tongue seemed swollen; by night the tongue had swollen so much that it choked her to death. I know of no other symptoms. She was in a small cleared lot and a few hogs were in it with her, so do not think it could have been caused by snake bite. Could it have been an insect bite?—Subscriber, Holtville.

The symptoms given are too meager to make a diagnosis. A post mortem examination would probably have shown an abscess forming in the throat that prevented return flow of blood. In some cases of anthrax the head will swell fast and death take place in a few hours.—R. T. W.

DR. WHITTLESEY'S VETERINARY REMEDIES.

These are not ordinary mixtures but are from well tried formulas, used in an extensive practice in Southern California for nearly a quarter of a century. Dr. Whittlesey's Sulphur Arsenical Salve for deep fistulous or ordinary chronic, indolent sores such as. "Poll Evil," "Fistulas," "Quitters," "Thrush," "Scratches," "Warts," "Collar Sores" or "Sit-fasts," $1.00 per package postpaid. Printed directions. Dr. Whittlesey's Antiseptic Healing Powder forms a coating over raw surfaces, excludes air, flies and floating germs. Makes a cheap and convenient dressing for the many sores that occur to stock on the ranch. $1 full pound can postpaid.

DR. R. T. WHITTLESEY,
Veterinary Hospital, 714 East Seventh St., Los Angeles, Cal.

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A most practical corn harvester is made by the New Process Mfg. Co., of Salina, Kansas. It will do almost anything that a corn binder will do and cost only a fraction as much. With it a man can cut and shock from four to six acres a day, and it is so simple in construction and operation that a boy can run it. It has been sold in every state in the Union, and has given universal satisfaction. It will pay for itself in less than one season, and is so compact and well made that it will last for years.

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In this department we will insert your advertisement under a classified head for 1½ cents per word. No ad accepted for less than 25c. Our classified columns are the clearing house for our many thousand readers.

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FOR SALE—SECOND HAND
WINDMILLS, TANKS,
PUMPS, ENGINES,
FARM MACHINERY,
that will do the same work as new at half the price. Domestic and irrigating windmills and tanks; all sizes. Tanks from 50 gallons up to 50,000. Engines—three 2 H. P. Fairbanks; 3 H. P. Dempster, 6 H. P. Fairbanks, 6 H. P. White & Middleton. 9 H. P. Moore, 10 H. P. Lambert, 18 H. P. Western, 25 H. P. self-contained engine and mining hoist, brand new 2 and 4 H. P. steam engine and boilers. Farm wagons, threshing machine, baler, header, Fosmer gang plow and Venicia disc gang breaking plow, road plow, sacker, hay truck, wagon tanks, slip and Fresno scrapers, wood sawing outfit mounted, splitter, weeder, fruit crusher, bone grinder. Most anything a rancher wants, second hand. DEMMITT CO., upstairs 120 N. Main, Los Angeles.

FOR SALE—11 H. P. WHITE & Middleton Gasoline Engine, guaranteed same as new. Also 15 H. P. of another make. BAILIE & BRANDT COMPANY, 943-945 No. Main St., Los Angeles, Cal.

FOR SALE—AMES NO. 2½ DEEP Well Pump and cylinder, rods, etc., cheap for cash. Also distillate engine. MACHINERY EXCHANGE, Main and Bruno Sts., Los Angeles, Cal.

TREES.

FINE LARGE EUREKA LEMON AND Valencia Orange trees, fine for replanting. Choice lot of fine Wash. Navels. Order quickly. They are going. Home 'phone 1731. JOHN R. KING, Whittier. Cal.

SURPLUS STOCK. MONTEREY PINES, 10 feet, 85c. Camphor trees, 3 feet, 28c. Black Acacias, 8 feet, 35c. Arbor Vitae, for boundary line planting, 15c. Canary Pines, 2½-3 feet, 45c; 8 feet, $1.50. BALLOU'S NURSERY, Pasadena, Cal.

MARSH SEEDLESS GRAPEFRUIT—600 large trees for sale. E. S. THACHER, Nordhoff, Cal.

LATE VALENCIA ORANGE TREES for sale for May and June delivery. ADOLPH RIMPAU, Anaheim, Cal.

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WANTED.

WANTED—YOUR WORK PAYS THE expense to learn a trade that pays $5 a day, in a few months' time; electricity, automobiles, plumbing, bricklaying; actual contract jobs; 200 students last year. UNITED TRADE SCHOOL CONTRACTING COMPANY, 647 Pacific Electric Bldg., Los Angeles, Cal.

A FARMER, UP-TO-DATE AND A hustler, wants a place as foreman or superintendent. Is thorough in general farming, irrigation, vine and deciduous fruit growing. Experienced in working all kinds of labor, both tenant and wage system. Address BOX 647, Monrovia, Cal.

EDUCATED GERMAN, PRACTICAL dairyman and rancher, wishes position as superintendent on large dairy ranch. Send letters under name of A. BADER, General Delivery, Pasadena, Cal.

WANTED—TO RENT LAND FROM 30 to 100 acres, good alfalfa land with water for irrigation; or what have you to offer to an experienced farmer who can give first-class references? Address A. C. WEBSTER, Chatsworth, Cal.

HORTICULTURAL PRINTING.

THE KRUCKENBERG PRESS, 123 South Los Angeles St., Los Angeles, Cal., makes a specialty of Horticultural Printing and Engraving. Cuts and illustrations of all standard, economic and ornamental plants on hand and subject to the use of patrons without cost. Samples and estimates cheerfully furnished. Remember, we design, write, engrave, bind and print; in brief, do the "whole thing," at no additional expense to the customer. Correspondence a pleasure; a personal visit a joy. Headquarters for catalogues and quadri-color printing.

RABBITS.

FOR SALE—EUREKA RABBIT WARren Co., 928 Valverde St., Los Angeles, Cal., Wright and King, props. 150 fine bred New Zealand hares and 200 fine bred Belgian brood does and stud bucks from $1.00 up. Your correspondence is solicited.

RARE PLANTS.

FINEST THINGS FOR LAWNS. Feathery, not running, Bamboos; Arundinaria falcata, and Arundinaria Falconeri. For sale by the MONTARIOSO NURSERY, Box 1500, Santa Barbara, Cal.

WILD PLANT IMPROVEMENT GARdens, Santa Ana, California. NEWTON B. PIERCE, Proprietor. Rare choice ornamentals and new fruits from all lands.

POULTRY.

HOW TO MAKE MONEY—MRS. A. Basley's New Poultry Book is just out. It is without exception the most wonderfully complete manual on the subject of successful poultry management ever written. The secret of how to raise every turkey hatched and the "Basley Formulas," now published for the first time, are worth many times the price of the book. The "Western Poultry Book" is a practical book by a practical woman. Price $1.00. Address Mrs. A. Basley, Box 77, Venice, Cal. Send postal.

FOR SALE, AT A BARGAIN, AT 956 E. 33rd Street, about 60 White Wyandotte hens and about 250 head of young stock, ranging from two weeks to four months, all from prize stock. Together with incubators, brooders, Philo houses, and everything complete for a start in the chicken business. By a party who has made a success of it, but is forced to sell on account of business in the East which will require his constant attention.

CHICKS! CHICKS! CHICKS! CHICKS!
2500 Per Week.
Barred Rocks, Rhode Island Reds, White Rocks, Brown and White Leghorns. We ship safely everywhere within 48 hours. Send today for free 32-page book. Tells all about the chicks we offer and gives prices on laying hens, pullets, cocks, etc. PIONEER HATCHERY CO., 112 East 8th St., Los Angeles.

POULTRY WANTED—WE PAY THE highest market price for all the local poultry we can get, no matter how large the quantity; also fresh ranch eggs. We remit immediately. ALLAWAY & LAYTON CO., 607 E. 3rd St., Los Angeles, Cal.

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WHITE INDIAN RUNNER DUCKS. Some fine breeding stock for sale. Also eggs from Howard's strain White Leghorns. J. C. CARLYLE, R. F. D. 4, Box 249, Los Angeles. Successor to Mrs. Grey. Phone Sunset South 6342.

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LIVE STOCK.

JERSEY CATTLE FOR SALE—REGistered heifer calf, well bred, $25.00. Unregistered bull calf, $10.00. Unregistered yearling bull, $35.00. HENRY H. JAMES, proprietor Franklin House, Fair Oaks, Sac. Co., Cal.

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FARM LANDS FOR SALE.

FOR SALE—OWENS RIVER VALLEY. We are preparing to place upon the market 4000 acres of the choicest apple land in the Owens River Valley, which will include one of the most remarkable gravity water systems in the State. This land is wonderful in its productiveness beyond all belief; potatoes that run 500 bushels to the acre, alfalfa three tons to the cutting, timothy with 12-inch heads, the world's fair prize for honey, and last but not least, the finest apples grown on the Pacific Coast. Red winter apples that look like wax. No other land in California to compare with it. Not flat valley land, but foothill land with gentle slope, giving perfect drainage. The choicest apple land will be subdivided into tens, twenties and forties. The most wonderful scenery in America. Fishing and hunting in the high Sierras right at your door. Trout streams within walking distance. Southern Pacific's new main line east now building through valley, but will not be finished until spring, when this land will be formally open for inspection. In the meantime send in your name and address for booklet, plats and price list, which will be mailed to you as soon as they come from the press. This land is not for speculators but for real serious farmers who know the virtues of choice land, water and climatic conditions when they see them. Will make a special and attractive proposition to buyers who will go in this summer and start their improvements before the formal opening in the spring. Will be glad to take a few serious people with me on my next trip into the valley. JAMES R. H. WAGNER & H. S. COOK, 825 Wright & Callender Bldg., 4th and Hill Sts., Los Angeles, Cal.

IF YOU WANT AN UP-TO-DATE, money making home, see me at once. I have a nice little 40-acre fruit, vegetable and poultry farm. Level, good land, assorted fruits and berries on main country road, 3 miles from two good towns, all fenced and cross fenced with poultry netting. Well equipped for chicken business; three large 576-egg incubators, six large brooders run by gas, brooder house 2000 chick capacity. Buggy, wagon, mare, reaper, gang plow, drill and other implements, tools, etc. A neat six-room house lighted by gas. Fairbanks-Morse gas engine run by gas, operates grain and shell crusher, grindstone, wash machine, pump, etc. Fine water and lots of it piped to all parts of place. 5000-gallon tank and tank house, barn and other buildings. Price $4500, as owner must leave. $1500 cash takes it. Balance 10 years, 8 per cent. WM. MANTZ, Santa Maria, Cal. Box 578.

FOR SALE—815 ACRES IN SAN LUIS Obispo County. A typical dairy ranch. Plenty of wood, water, irrigable land, buildings, fenced and cross fenced. Orchards, vineyards, oranges, lemons and walnuts do exceedingly well here. 40 acres of land suitable for these. Price $21 per acre. For further particulars apply to MRS. F. A. CLINK, Pozo, Cal.

2285 ACRES CHOICE, DEEP, SANDY loam. Ideal for subdivision or Eucalyptus growing. Can be cultivated any day in the year. Southern Pacific Railroad runs through the ranch. Also close to deep water for shipping. Free from wind and frost. Now all planted to grain. Price $100,000.00 for limited time. GEO. W. SILL & CO., Watsonville, Cal.

IRRIGATED LAND FOR SALE, cheap. In the Lower Rio Grande Valley of South Texas. Ideal climate. Good markets. Large crops. Special inducements to several practical irrigation farmers. Address MANAGER, care of Cultivator, at once, or AMERICAN RIO GRANDE LAND & IRRIGATION CO., Mercedes, Hidalgo County, Texas.

BARGAIN IN FRUIT OR DAIRY ranch. I have for sale 160 acres of No. 1 fruit land in peach and raisin belt of Fresno county. On line of proposed Fresno and Monterey Electric Railroad. Level as floor and all irrigable. Water rates 33 1-3 cents per acre per season. Price $2200. Half down, balance time. CARL R. FLORY, Lemoore, Cal.

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FARM LANDS FOR SALE.

IF YOU WANT NO. 1 GOOD LAND, see me. I have four eighty-acre tracts, all level, three miles from good markets, good crops, water, fenced. One tract is improved. Price $50 to $80 per acre. One-half cash, balance five years, 8 per cent. I also have a fine, level piece of rich sandy loam land, 160 acres, desert claim, in San Luis Obispo Co., 12 miles from the Great Lake View gusher at Maricopa. Will sell my right for $500. This is a bargain. I have more land than I can farm, so come quick. WM. T. MANTZ, Santa Maria, Cal.

80 ACRES FOR $2000 CASH. IMprovements consist of a house, fences, pumping plant, artesian well, etc. Good chance for dairy, poultry or truck farming. BOX 334, Lancaster, Cal.

WAUKENA, A GOOD PLACE TO farm hogs, alfalfa, grain, fruit successfully. Write C. F. COLWELL, Waukena, Cal.

MISCELLANEOUS.

FOR SALE—1160 FEET SURFACE IRrigating pipe, 8 in., good as new, $150, f. o. b. Richfield or Anaheim. Address J. L. DAVEE, Olive, Orange Co., Cal.

SHOEING THE FARM HORSE.

The farm horse is generally an all-around-purpose animal, and, for this reason should be shod. In addition to its being obliged to do the ordinary farm work, it is also used for hauling farm products to market, and for a pleasure animal for the family.

Traveling on the hard roads would soon cause the feet to become sore if left unshod, later lameness, and loss of the use of the horse.

The farm horse should be shod with a moderately heavy shoe, one that will be durable and protect the feet. The shoes should have low calks in order that the frog may touch the ground. In winter the calks should be sufficiently long to get a good foothold on the slippery roads. If the feet are obliged to have shoes with the long calks for 3 or 4 months, then a bar shoe is to be recommended. The never-slip calks have become popular of late years for the reason that the calks are quickly removed and new ones replaced, thus saving time and money.

Just as great care should be taken with the shoeing of the farm horse as is taken with a valuable race horse. The feet should be perfectly leveled and placed at an angle of from 45 to 50 degrees for the front feet, and from 50 to 55 degrees for the hind ones. The shoes should not be fitted hot as they are likely to start diseases of the feet which might cause trouble later. The shoe should be attached to the foot with as small nails as will be necessary to hold it in place. Then, as in shoeing all horses, the nails should not be drawn too tightly and pinch the sensitive structures.

It is best to have the shoes reset every four to six weeks. If the horse can be kept off the road during the summer months, have the shoes pulled off and allow the feet to come down to the ground and get the natural frog pressure. The feet should be kept growing; then there will be very little trouble from the feet getting dry. Oil the coronary band of each foot twice a week. This band is located just underneath the hair line. It forms the horn of the wall, and if a new hoof is produced normally, the foot will not have time to become too dry.—C. L. Barnes, Colorado Agricultural College.

"Are you doing anything for others?" asked the philanthropist. "Sure," answered Mr. Crosslots. "I make a garden every year for the benefit of my neighbors' chickens."—Washington Star.

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No. 3
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________________1910

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NAME	P. O. ADDRESS	STATE

SIGNED____________________

ADDRESS____________________

Household Department

MOTHER GOOSE ON THE PRICE OF MEAT.

Little Jack Horner sat in a corner,
Eating some cake and pie;
'Twas bad stuff to eat, but he couldn't have meat
Because the price was so high.

Little Miss Muffet sat on a tuffet,
Eating of curds and whey;
Poor child, she was achin' for liver and bacon,
But the price was too heavy to pay.

To market, to market, to buy a fat pig,
Home again, home again, jiggety jig,
With nothing but turnips, potatoes and meal—
The price was too high for pig, mutton or veal.

There was an old woman, and what do you think,
She lived upon nothing but victuals and drink;
Garden stuff made up the whole of her diet;
She'd have liked a good steak, but was too poor to buy it.

There was an old man of Tobago
Who lived on rice, gruel and sago,
But a great millionaire
Left him money to spare,
And now to a beefsteak he may go.
—S. E. Kiser.

JELLY AND JELLY MAKING.

IN CONNECTION with studies with fruits, J. Belling, of the Florida Station, reports the results of extended investigations of the character of guava juice and of the conditions which attend successful jelly making with this fruit. According to his results, a preliminary heating of the fruit is essential, as juice expressed from the raw fruit did not flow readily, and though it gave a light, amber-colored jelly with the proper proportion of sugar, with or without citric acid, yet the characteristic guava flavor was entirely lacking. The juice from heated fruit passes through the filtering cloth more readily than that from raw fruit, and the heating also seems to help in extracting the fruit flavor.

The flavoring quality does not appear to reside in the oil glands of the rind. * * *.

In the boiling of guava jelly some acid (the natural acid of the ripe fruit) is absolutely necessary to change much of the sucrose into invert sugar, and if this does not take place then the sucrose (cane sugar) crystallizes out. Too much acid (and probably too prolonged boiling) seems to make the jelly sticky from the excess of invert sugar, and also to alter the pectin so that it will not gelatinize.

The pink color of guava jelly does not seem to depend on any pink color in the flesh of the fruit, though the white guavas yield a lighter jelly. The depth of color seems to be increased by additional amount of acid, prolonged boiling, and higher temperature at which the boiling is stopped.

The following directions are suggested for making guava jelly:

Cut the guavas in pieces with a sharp spoon (not iron) or with a plated knife. Heat them till quite soft in an enameled or aluminum vessel, with a small amount of water at the bottom, or in a double boiler without water. Put the soft fruit in a strong cloth bag, or folded in a cloth between boards, under a strong press. Measure the hot juice. Heat it in a deep clean pan (leaving room for the extensive frothing), adding a quantity of powdered white sugar equal in bulk to the undiluted juice. When the sugar has dissolved, the hot solution may be filtered through cloth. Boil down until the thermometer in the liquid marks the point which gives jelly of the color and consistency desired, which may be 113° C. (235° F.), or some neighboring temperature. Run the hot liquid into glass jars or into molds. Tough jelly which is not sticky may be satisfactorily packed in shallow ornamental boxes, as is done in Cuba.

Guava juice ferments quickly after it is expressed. According to Professor Belling, when it is desirable to keep the juice for jelly making—

It may be put hot from the press into clean glass bottles or jars immersed to the neck in hot water, which is then kept above 140° F. for half an hour or so. The stoppers, corks, caps, or rubber rings should be heated in the same way and the bottles of juice closed when hot. Such sterilization of the acid juice will obviate the necessity for the addition of chemical preservatives.

At the department of household administration of the University of Chicago Miss Jenny H. Snow studied the effects of sugar and temperature on fruit juices. It was found that "currants, grapes, and plums would jelly without adding sugar, but the product was neiter clear nor palatable and the cost, in the case of the currants, was over a dollar a glass."

Jelly which contained the smaller proportion of sugar (one-half cupful to a cupful of juice) seemed to keep as well as that containing the larger proportion (one cupful of sugar to one of juice).

In the case of apples, the average density of jelly at the boiling point was not far from 30°. With plums it was on an average somewhat lower; with currants it varied from 24 to 28°, being about 27° on an average.

The density at which a good product may be obtained varies with different fruits, but seems to be nearly uniform for each fruit and not affected by the amount of sugar used.

This density was obtained at a lower temperature and in less time with the larger amount of sugar. The smaller the amount of sugar used the longer the period of boiling required and the darker the color of the product.

In each case the smaller the amount of sugar the more pronounced the fruit flavor of the jelly.

Miss Snow also studied the effect of adding sugar to acid fruit before and after cooking. The belief is quite widespread among housekeepers that if sugar is added after fruit is cooked a smaller quantity is required for sweetening than is the case when it is added before cooking. Miss Snow also studied the relative sweetness of cane sugar (the ordinary sugar which is obtained from sugar cane, sugar beets, and the sugar maple) and invert sugar (dextrose and levulose), which are found in nature in fruits, etc., and which can be obtained from cane sugar by inversion, as, for instance, by cooking sugar with acid. According to her results, dextrose is

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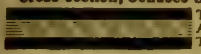

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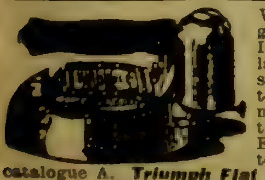

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much less sweet and levulose sweeter than cane sugar, while a mixture of equal parts of dextrose and levulose is sweeter than cane sugar.

When cane sugar was added to apples before cooking and boiled with them, it was found to be largely inverted. When added at the close of the cooking period, it was only slightly inverted, and, although the invert sugar is less sweet than cane sugar, yet "the difference in sweetness between stewed apples when the sugar has been added before and after cooking, respectively, is so slight as to be of little practical consequence.

Overdilution of fruit juice (with water) should be avoided, since this leads to the use of too much sugar; probably the extra boiling thus rendered necessary also impairs the texture of the jelly.

The physical constants of hot juice ready to jelly on cooling are, substantially, boiling point, 103° C., and specific gravity, 1.28.

Jelly is readily made through boiling pectin with acid, water, and sugar.

Jelly making seems to consist in so controlling conditions by means of acid and sugar and boiling as to cause the pectin to be precipitated in a continuous mass throughout the volume allotted to it.

The fall fruits used in these jelly-making studies were covered with cold water, brought to the boiling point, and thoroughly cooked, and the juice allowed to drip through a filter made of a double fold of cheese cloth.

It was found that the pulp remaining on the filter could be again boiled up with water (the least amount possible) and that the resulting juice would make a good jelly. This was particularly true in the case of grapes, even the fourth and fifth extractions making an excellent quality of jelly—a quality better than that made from the first extraction because potassium acid tartrate crystals did not appear in it, as is usual in the case of jelly from grapes.

As previously stated, the presence of acid is considered essential for jelly making and a number of tests were carried on in which citric acid and tartaric acid, i. e., organic acids which occur normally in fruit juices, were used in different proportions.

From the results it appears then that—

Through this addition of an organic acid to a fruit juice containing naturally little acid, jellies can be made if these juices contain pectin. However, the flavor of the fruit is generally changed; the sweet-apple jelly so made tasted much like that made from sour apples, the tartness of course increasing with increasing percentages of acid; the flavor of the pears, in pear jelly, was fairly well preserved, while in peach jelly the peach flavor was completely destroyed. Repeated experiments, varying the percentages of acid, were made in an endeavor to preserve the peach flavor, but success was not attained in this respect, though a jelly of fair texture could be produced. From experiments testing the relative merits of tartaric and citric acids in connection with the use of one or the other to acidify a fruit juice, the balance of favor seemed to be with the former. Both texture and flavor of jellies made by its use were superior to those in which citric acid was used.

These experiments are of special interest in view of the general household practice of adding sour fruit like currants or crab apples to sweet fruits like raspberries or elderberries to make a jelly of good consistency, and the even more common addition of lemon juice to jams and jellies made from a great variety of fruits. When currants or sour apples are thus used, pectin as well as acid is added, while with lemon the improvement in flavor is perhaps the consideration most often in mind, though many housekeepers realize that the lemon juice will make the material "jelly."

According to Miss Goldthwaite—

That so-called jellies can be produced by merely boiling down fruit juices is well known. Naturally the flavor of such a jelly is decidedly fruity, but in texture it is very tough. The making of such jellies requires a large amount of juice, e. g., we found to make one glass of such apple jelly required a volume of juice sufficient for six glasses when made with sugar. Ordinarily, sugar is cheaper than fruit juices, so from the standpoint both of palatability and of economy (possibly also of digestibility) jellies made with sugar are preferable. * * * It seems better not to boil sugar and juice together from start to finish in jelly making, but rather to add the sugar so that it may be boiled with the juice for a period not to exceed one-half the total time of cooking.

Apparently the texture of the jelly may be greatly impaired by excessive cooking of an overdiluted juice.

The investigations summarized above not only furnish the housekeeper with information which is of use in jelly making, but also provide the teacher and student with additional data which is of value in understanding the physical and chemicial problems which underlie this household process.—Bulletin 388, U. S. Dept. Agriculture.

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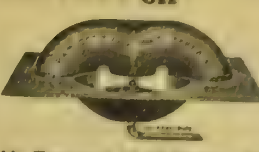

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Owens Valley Land
See Announcement on Page 91

The Lompoc Valley claims its biggest barley crop.

San Francisco and Los Angeles Produce Markets

Los Angeles Markets

LOS ANGELES, July 27, 1910.

Butter.

A slightly higher price prevails on the lower grades and a very firm condition prevails. Receipts normal.

Price to trade 2½c in advance of the following Produce Exchange quotations:

Extras	31½
Firsts	30
Cooking	26

Cheese.

Northern fresh	16½@17
Anchor, large	18
Oregon Daisy	18¼@19
Imported Swiss	28@30
Domestic Swiss	23@25

Eggs and Poultry.

Eggs have taken a material decline. Market weakened materially last week but is now rapidly recovering.

Paying price f. o. b. L. A. is:

Local ranch candled	31
Case count buying price	27
Eastern fresh	27
Eastern storage	25

Dealers pay for live poultry f. o. b. L. A.:

Hens, per lb	15@17
Roosters	9
Broilers	16@17
Turkeys	22@24
Geese	12
Ducks	14¼
Pigeons, doz.	75

Live Stock.

The following quotations are f. o. b. Los Angeles, on all stock:

Hogs, 175 to 200 lbs	10
Prime Steers	5
Heifers	4@4½
Calves, per lb	5¼
Sheep ewes, per head, shorn	4.00@4.50
Lambs, per head	3.50
Wethers, shorn	4.00@4.50

Potatoes.

Wholesale prices are:

Highlands	1.50@1.60
New potatoes, per ctl	1.50
Sweets, Yellow, per lb	4½@5½

Onions.

Wholesale quotations:

Silver Skin, per ctl	2.25
Yellow Danvers	2.50
Garlic	8

Vegetables.

Wholesale quotations:

Asparagus	10@12
Artichokes, northern, doz	75
Beets, sack	90
Beans, green and wax	4@5
Beans, Limas	6@8
Brussels Sprouts	10
Bell Peppers	6@8
Green Chilis	10@12
Cabbage, per sack	1.25
Cucumbers, per box	35@45
Celery, doz.	85@1.00
Cauliflower, per doz.	1.25
Carrots, per sack	90
Cream Squash, per lug bx	1.00
Egg Plant, per lb	10
Endive, doz.	40
Green Corn, box	25@35
Green Onions, per doz. bunches	20
Horseradish, per lb	25
Lettuce, choice, per crate	1.00
Leeks, per doz.	20
Okra, lb	8@10
Peas, per lb.	5@6
Parsley, per doz. bunches	20
Parsnips, doz. bunches	15@20
Radishes, per dozen bunches	10@15
Rhubarb, strawberry, per lb	4
Rhubarb, crimson winter	4
Spinach, per dozen	20
Summer Squash	35
Turnips, sack	90
Tomatoes, box	25@50
Water cress, doz. bunches	25@35

Citrus Fruits.

Valencias	3.75
Grapefruit	2.2.5@3.00
Lemons	4.00@4.50

Fresh Fruits.

Wholesale prices on the market are:

Apricots, per box	80@1.00
Alligator Pears, per doz	4.00@5.00
Apples, New	1.85
Apples, W. Astrachan	1.65
Gravensteins	1.75
Alexander, lug	1.75
Crabapples, lb.	3½
Cantaloupes, crate	2.00
Figs, box	75
Grapes, crate	1.00@1.25
Pears, lb.	3@3½
Bartletts	1.90@2.00
Strawberries	4@5
Raspberries	6@7
Blackberries	7
Pineapples	6@7
Logans	6@7
Nectarines	1.00
Peaches, box	60@85
Plums, box	75@1.00
Prunes, box	75@1.00
Watermelons, lb.	1½@2

Dried Fruits.

Buyers of apricots are becoming more anxious and Orange county reports contracts at 10 cents pound.

Wholesale prices are:

Apricots	9@12
Evap. apples, fy, per lb	8½@9
Peaches	5@8
Pears	8@10
Nectarines	10
Prunes	3½@9
Plums	7@8

Beans Dried.

Wholesale quotations:

Limas, per ctl.	4.75
Pink, No. 1	7.25
Black eyes	6.00
Lady Washington	4.50
Small white	4.75
Garvanzas	4.50
Bayous	6.50
Lentils	7.00

Nuts.

Wholesale quotations are:

No. 1 soft shell walnuts	15
No. 2 soft shell	10
Walnuts, budded	16
Almonds, IXL, per lb	17
Pecans, polished	14@16
Peanuts, Eastern	7¼@7½
Peanuts, Cal.	5@6

Honey.

Wholesale quotations:

Extracted water white	8¼
Extracted light amber	7½
Amber comb	18
Light amber	15
Beeswax	30

Hay.

Quantities of alfalfa are being offered with few takers. This is tending to weaken market and accounts for lower quotations. Some very low grade barley is being thrown on market.

Buying prices f. o. b. cars L. A. are:

Barley hay	8.50@11.00
Alfalfa	10.00@12.00
Wheat hay	10.00@12.00
Tame oat	11.00@13.00

Grain.

Wholesale selling price f. o. b. Los Angeles:

Wheat, new, per ctl	1.90@1.95
Corn	1.80
Popcorn, ctl.	3.00@3.45
Egyptian corn	1.80
White oats	1.90
Seed Rye	2.10
Seed Barley	1.30

Feed Stuff

Wholesale selling price f. o. b., Los Angeles:

Cracked Corn	1.85
Cracked Wheat	2.05
Shorts	1.80
Bran	1.55
Oil cake meal	2.50
Feed Meal	1.90
Rolled Barley	1.25

San Francisco Markets

SAN FRANCISCO, July 26, 1910.

Butter.

Butter is in good demand with a half cent advance and a still further tendency upward.

The official quotations of the San Francisco Wholesale Dairy Produce Exchange for today are as follows:

California extras, per lb	29½
California firsts	29
California seconds	28

Cheese.

California flats, new	12½@14½
Cal. Young Amer fy new	15½@16½

Eggs and Poultry.

Eggs advance slightly with holders demanding still higher price, with every probability of securing it.

Official quotations of the S. F. Wholesale Dairy & Produce Ex. are:

Fresh ranch extras	31
Firsts	28
Seconds	23
Thirds	20
Hens, per doz.	5.00@10.00
Roosters, per doz.	5.00@10.00
Fryers, per doz.	4.00@5.00
Broilers	2.25@350
Geese	2.00@2.50
Ducks	4.50@7.00
Pigeons	1.50@2.25
Squabs	2.50@2.75
Belgian Hares, per doz.	3.50@6.00

Live Stock.

San Francisco prices gross weight:

Steers	3½@5
Cows and heifers	2½@4
Hogs	6@10
Calves per lb	4½@6
Milk Lambs, unshorn	6@6¼
Wethers No. 1	5
Ewes No. 1	4½

Potatoes.

Wholesale market quotations:

River White, new, box	60@85

Vegetables.

Wholesale quotations:

Artichokes	35@40
Asparagus, per box	50@1.75
Beans, string, per lb	2@3
Beans, Wax	2@3
Beans, Limas, lb	5@6
Cucumbers, box	25@40
Celery, per crate	90@1.50
Chili Peppers, per box	35@40
Bell Peppers	6@7
Green Corn, sk	75@2.00
Egg Plant, per box	75@1.00
Lettuce, per crate	4.50@5.00
Okra, box	60@75
Peas, per lb	1@2
Rhubarb, box	50@75
Summer Squash, box 25 lbs	40@50
Tomatoes	40@85
Garlic	2½@4

Onions.

Onions, sk.	1.50@1.80

Citrus Fruits.

Valencias	2.00@4.00
Grapefruit	1.50@3.50
Lemons	3.00@6.00
Limes	6.00@6.50

Fresh Fruits.

Apricots, crate	50@65
Apples, box	35@1.00
Apples, Gravensteins	1.25@1.35
Crabapples	40@60
Apricots, crate	50@65
Nutmegs	50@75
Figs, box	1.00@1.25
Grapes, seedless	75@1.00
Grapes, Fontainbleau, crate	50@60
Grapes, Malagas	60@75
Grapes, Muscat	75@1.00
Grapes, Rose of Peru	50@60
Huckleberries, lb.	10@15
Pears, large boxes	60@1.25
Bartletts, wrapped	1.25@1.50
Bartletts, ton	40.00@45.00
Peaches, box	35@50
Nectarines, red	65@85
Nectarines, white	50@65
Plums, box	25@40
Tragedy Prunes, box	60@75
Blackberries	3.00@5.00
Raspberries, chest	7.00@10.00
Strawberries, Longw., chst	3.00@4.00
Strawberries, Malindas	4.00@5.00
Strawberries, Banner	5.00@6.00
Logans, chest	6.00@8.00
Pineapples, doz.	2.50@3.00
Watermelons, per doz	1.50@2.50

Dried Fruits.

Santa Clara prunes	3¼@3½

1 cent premium for larger sizes.

Apricots per lb. Royal	9@10
Peaches	5@5½
Apples, evap.	7½@7¾
Pears	5@7½
Figs	3¾@5
Nectarines	5@6
Plums	7@8

Futures on 1910—Apricots, 7@10; Peaches, 5@6; Prunes, Santa Claras, 3¾@4¼, 1 cent premium.

RAISINS—1909 crop, f. o. b.; fancy seeded, 16-oz. cartons, 5@5¼c; do, 12-oz., 4½c; do, choice, 16-oz., 4½@4¾c; choice. 12-oz., 4c; 50-lb. boxes loose Muscatels, standard, 4-crown, 4@4½c; 3-crown, 3¼@3½c; 2-crown, 2½@3c; seedless Thompson, unbleached, 3c; do, bleached, 5@6c; Sultanas, unbleached, 2¼c; do, bleached, 4@4½c; Muscatels, unbleached, 2¼c; London layers, clusters, 2-crown, 85@90c; 3-crown 90c@$1; 4-crown, $1.30@1.50; 5-crown, $1.75@2; 6-crown, $2@2.50.

Nuts.

Walnuts S S No 1	13@13½
Walnuts, hard shell	13
Almonds '09 N P U	13
Almonds '09 Nonp	14½
Almonds I X L	14
Pecans	15@17
Chestnuts	14@15
Peanuts	5@6½

Beans Dried.

Limas	4.55
Pink	6.25
Black eyes	5.60@5.75
Small white	4.00@4.15
Large white	3.90@4.00
Kidneys	6.75
Garvanzas	3.25
Bayo	6.35@6.50
Horse beans	1.75
Red Mexicans	6.00

Hops

Hops, 1909 crop	10@14
Hops, 1908 crop	8@10

1910 contracts now being made at 12 @14 cents.

Honey.

White comb	14@15
Amber	10@12
Extracted W W	7½
Extracted light amber	6½@7
Beeswax, per lb.	25@29

Hay.

Scott, Magner & Miller report:

Receipts of hay here in San Francisco for the week ending todav have amounted to 4400 tons. This is the heaviest amount received so far this season, being an increase of about 40 per cent over last week's arrivals.

Large quantities of hay are now coming by water from the bay and river landings, and will continue from now on through the summer season.

The difficultv that we are at present experiencing in obtaining cars for the loading of hav is a serious consideration, and delays and hampers trade to a large extent, and will probably have an unsatisfactory effect in those sections where this difficulty exists.

The market is practically unchanged, although there is a shade easier feeling along the whole line. A little hay of extra choice quality will sell readily, but the bulk of arrivals being of medium and poorer classes of hay, have not sold to any satisfaction, or moved off into consumption as we should have liked to have seen it.

The market on alfalfa hay is also rather quiet; no large operations appear to be under way, as the demand has not warranted such action up to this time. Considerable alfalfa hay could be shipped from this port, providing prices were at such a basis that we could successfully enter the coast markets.

Fancy wheat	13.00@13.50
No. 1 wheat or wh and o	11.00@12.00
No. 2 wheat or wh and o	9.00@10.00
Choice tame oat	11.00@12.00
Other tame oat	8.00@10.00
Wild oat	7.50@9.50
Stock hay	5.00@6.00
Alfalfa	6.50@10.30
Straw	40@55

Grain.

Wheat No. 1	1.60@1.65
Barley, common	1.05@1.08¾
Barley, fancy	1.10
Oats, white	1.42½@1.47½
Rye, new crop	1.50@1.60
Corn, large yellow	1.55@1.60
Alfalfa seed	16@18
Mustard brown	3¾@4½
Millet	2½@3
Flaxseed	4½@5
Broom corn seed, per ton	23.50

Feed Stuff

Bran, per ton	22.00@23.00
Feed cornmeal, per ton	34.00@35.00
Cracked corn	34.00@35.00
Ground barley, per ton	23.50@25.50
Rolled oats, per ton	28.00@29.00
Middlings	30.00@31.00
Oil cake, per ton	38.50@40.00
Cocoanut cake per ton	25.00
Mixed feed, per ton	24.00@30.00
Shorts	23.00@24.00

Deciduous Market

SACRAMENTO, July 23, 1910.

The following circular of the California Fruit Distributors gives number of cars of deciduous fruit shipped from all points in California for the week (7 days) ending Friday morning, July 22nd.

Peaches.

Two hundred and sixty-eight and three-fourths cars. Twice as many peaches were shipped out this week as last. Varieties now going forward are the best produced in the state—Susquehannas, Wheatland, Late Crawford, Elberta, with a few highly colored clings. Peaches will continue in ample supply for the next ten days and possibly two weeks, but we believe the heaviest shipments have now gone forward. Fruit is of very good quality.

Plums.

One hundred and eighty-five and three-fourths cars. Varieties now available are the same as reported last week. Movement of this fruit has been in excess of our expectations but will continue of considerable volume for but a few days more.

Pears.

Four hundred and sixteen and three-fourths cars. Shipments of this fruit also show a heavy increase. This is caused by several days of unusually warm weather which prevailed during the early part of the week and has hastened picking considerably. Shipments from the River have been better maintained than expected, but are now practically done. The bulk of the crop has been moved from Suisun Valley. It is expected that shipments will materially decrease from this time on.

Grapes.

Fifteen and one-fourth cars. Thompson Seedless grapes are now moving in fair quantities and will be followed by Malagas which are now appearing in a small way. Early Tokays from the Vacaville section are going forward to auction and the first cars of Rose of Peru will move out next week.

Since our last letter we have to report four days of excessively warm weather which has materially effected the grape crop. In some sections a loss as high as 50 per cent has been reported and the damage has now reached a point where it is safe to say that the output will be considerably curtailed. More damage is reported from the early sections than the later ones. It is also reported from Fresno that owing to heat and mildew the output of Thompson Seedless and Malaga will be less than expected. Quality of fruit unaffected by burn, continues very promising, and we do not expect there will be any further damage.

Citrus Market

LOS ANGELES, July 27, 1910.

The orange market is in a very satisfactory condition with in the neighborhood of 1750 cars of Valencias yet to go. Every section shows a satisfactory condition, though it is possible the auctions do not show quite as high an average as last week.

The lemon market is rather stronger than a week or two weeks ago and has every promise of holding satisfactory prices.

Shipments.

Total shipments of citrus fruits to date since November 1, 1909: 27,286 cars, of which 23,394 were oranges and 3,892 were lemons. To same date last season, 33,861 cars, of which 28,674 were oranges and 5,187 lemons.

NEW YORK, Monday, July 25.—Offerings of California oranges were light today and under an active demand the market was strong. There was no material change in prices, though on fancy fruit the figures were a little higher. The hot weather causes an active demand for Sicily lemons from store, and in spite of liberal purchases at recent auctions, stocks in the hands of local distributors are reported to have been closely absorbed. Ten cars of oranges and one car lemons were sold. It was very hot and sultry.

SEEDLINGS—	Avge.
Titus Ranch, Fy, San Marino GPA.	$4.50
El Toreador, Sd, San Marino GPA.	3.65
Titus Ranch, Fy, San Marino GPA.	4.45
El Toreador, Sd, San Marino GPA.	3.20
Red Globe, Riv Ex	2.20
VALENCIAS—	Avge.
Security, Or Fy, G & Speich	$4.55
Sunset	2.70
Pointer, ACG Ex	4.80
Homer QC, Corona	4.25
Camel QC, Corona	2.90
Old Mission Fy, Chapman	7.20
Old Mission Ch, Chapman	6.40
Golden Eagle Sd, Chapman	4.90
Ideal	4.35
Delicious	2.55
Stock Label	1.85
Orchard Or, National O Co	4.40
Standard, National O Co	3.15

LEMONS—Selected, $5.25; Homer, $5.15. GRAPEFRUIT—Stag, $2.90; Seedless, $3.35; Sunset, $2.65; Yellow Beauties, $2.25; Old Mission, $3.75; Golden Eagle, $3.00; Orchard halves, $1.30.

CINCINNATI, Monday, July 25.—Hotter, warmer weather predicted. Market very strong. One car Valencias, one lemon sold.

VALENCIAS—Eagle, $3.75. LEMONS—Bridalveil Limoneira Co., $5.05; Whitecross, $4.95.

ST. LOUIS, Monday, July 25.—Warm. Market advancing. Two cars lemons, two cars oranges sold.

LEMONS—	Avge.
Family QC, Corona	$4.35
Red Shield, ACG, Azusa	5.35
Floral SB, Colton	3.00
Blue Seal, ACG, Azusa	4.70
Green Crown, ACG, Azusa	5.15
VALENCIAS—	Avge.
Fiesta, Riv Ex, Pachappa	$4.35
Pond Lily, Riv Pachappa	3.95
Orchard Run, Riv Pachappa	4.00
Scroll, Riv Pachappa	2.55

ST. MICHAELS—Tiger, $3.45; Floral, $3.00; Gem, $2.00. HALVES—Tiger, $1.50; Floral, $1.15.

CLEVELAND, Monday, July 25.—One car Valencias, two cars lemons sold. Market higher on Valencias and lemons. Muggy.

LEMONS—	Avge.
Squirrel, AH Prenda	$4.85
Commercial, AH Prenda	2.90
Arab, SA Ex	5.45
Palm Tree, AH Prenda	3.70
Pet, SA Ex	5.95
Greyhound, SA Ex	5.10
VALENCIAS—	Avge.
Gavilan, Riv Ex, Riv	$3.85
Braeside, Riv Ex, Riv	3.15

PITTSBURG, Monday, July 25.—Seven cars sold. Market firm on good oranges and lemons. Hot.

LEMONS—	Avge.
Touchdown	$4.80
Citrus Belle, Sd, CCU	3.95
Foxaway, Escondido FGA	4.00
Limited	4.20
Liberty, Escondido FGA	4.95
VALENCIAS—	Avge.
Lotengo, Xc, Sparr F Co	$4.05
Red Xc, OK Ex	3.25
Stock Label, ST Nordhoff	3.10
Owl, OK Ex	2.55
Swallow, OK Ex	3.45
Jasmine, DM Monrovia	3.65

BOSTON, Monday, July 25.—Seven cars sold. Hotter. Unchanged on oranges, higher on lemons.

LEMONS—	Avge.
Punch ST, Colegrove	$4.95
Pet, SA Ex	5.75
Club ST, Colegrove	4.60
Defender, Altland F Co	2.95
VALENCIAS—	Avge.
Sunset, QC Corona	$2.65
Robusta, AH Pachappa	5.10
OIC, QC, Corona	3.30
Hobo, AH, Pachappa	3.35
Triumph, Or, CCU	4.55
Turquoise, CCU	3.15
Topaz, CCU	3.30
Faneuil Hall, CCU	2.85

PHILADELPHIA, Monday, July 25.—Two mixed cars and one car lemons sold.

VALENCIAS—	Avge.
Sweetheart, AF High	$4.00
Eagle, AF High	2.40
Blossom Xc, R F Mo Co	2.85
Our Pride, AF High	2.20
Camelia Xf, Red, Red MO Co	3.55

LEMONS—Quail, $4.45. ST. MICHAELS—Our Pride, $1.50. SWEETS—Camellia, $2.70; Blossom, $1.80. GRAPEFRUIT HALVES—Sweetheart, $1.50.

CHICAGO, Monday, July 25.—Lemons are steady. Trade is fairly active and there are plenty offered. Boxes, California choice, $6; extra choice, $6.50; common, $5.00.

Oranges rule quiet. Offerings are small and a limited demand eixsts. Boxes late Valencia extra choice, $4@$4.25; choice, $3.50@3.75.

GOOD PRICE FOR ALMONDS.

The California Almond Growers Exchange is just sending out Bulletin No. 8 in which it refers to a 13, 14 and 15 cent offer for Ne Plus Ultra, I. X. L. and Nonpareil. This was two cents higher than was paid to any grower prior to July 1st, and we doubt not may be explained by the fact that the association through its manager, J. P. Dargitz, has been securing not only from all sections of California, but from European points, figures as to output of almonds. The circular adds:

"Boston reports all offerings of almonds withdrawn for the present That means the holders look for a rising market.

"New York reports an anticipated advance on Tarragonas of ½c to 1c a pound.

"Bordeaux, France, reports walnut crop badly damaged. This will help all the nut markets.

"Chicago reports that they are unable at present to get any of the Pacific Coast operators to quote them a price on almonds. Do they, also, look for a rising market?

'One San Francisco firm has asked for all our almonds, of varieties less than 5 tons each, to be used for shelling. But we have already sold that class of goods to be shelled."

This association is accomplishing much for its members, and this is only one more proof of what other producers should imitate. Just at this time the apricot growers of Orange county are urging every apricot grower who has information on the apricot output, to send estimates and probable prices in every section of the state.

POULTRY FOR GRASSHOPPERS.

Perhaps we are neglecting the readiest means of mastering this pest in trying to find some new remedy. Perhaps, where a large crop is threatened, the remedy we suggest might not be effective, but we believe the chickens and the turkeys, if properly handled, would in a large measure take care of the grasshoppers. So long as we feed the fowls liberally about the buildings, they will not forage much or far from the feeding place; but if movable colony houses were provided, and placed in the fields, and the fowls were fed very little, and that feed scattered broadcast over a large acreage, making the fowls hunt for it, they would very largely take care of the hoppers. This should be done at the very first appearance of the hoppers in order to keep down the increase as largely as possible, and it is astonishing to see how many gallons of hoppers a hundred chicks or turkeys can dispose of in one day. No feed should be given in the morning so they will be more ready to forage.

We have always advised disposing of chicks with the exception of those meant for breeders for the next season, just as soon as they are large enough to market, as the prices later in the season will not pay for the increased weight. But with the great damage being done by grasshoppers we believe a farmer will make a mistake by selling his poultry until this pest is disposed of. If we had a specially valuable garden crop, we would surely protect it by this means, even if we had to buy poultry and had to herd them during part of the day.—W. E. Vaplon, Colorado Agricultural College.

KNOW YOUR BUSINESS.

Education to be of the highest value in its application to almost any calling must be practical, and this is especially so with bees, therefore, as soon as the first general knowledge has been acquired the prospective beekeeper should buy two or three colonies of bees and learn to handle them while continuing his reading and study of the subject. He will find that many of the theories he may approve on the subject will fail in practice. His judgment needs to be trained by actual practice with bees. He must acquire skill in handling them, and above all, he must get actual acquaintance with the bees and their habits and ways of doing things. He will acquire skill in diverting the bees from unprofitable to more profitable lines of work so that the bees as his servants, will put in all their time in such lines as he may lay out for them.

Those who have seen Miss Cecilia Beaux's home, "Green Alley," on Gloucester Point, count it rarely lovely. Miss Hildegarde Hawthorne has written of this beautiful "Garden of the Heart" for the August Century, a garden where "Nature is trusted, and perfectly mated to art and human necessity."

The Western Engine

Will keep right on Pumping Pumping Pumping

YEAR IN AND YEAR OUT.

Using least fuel
Requiring fewest repairs
Lifting most water

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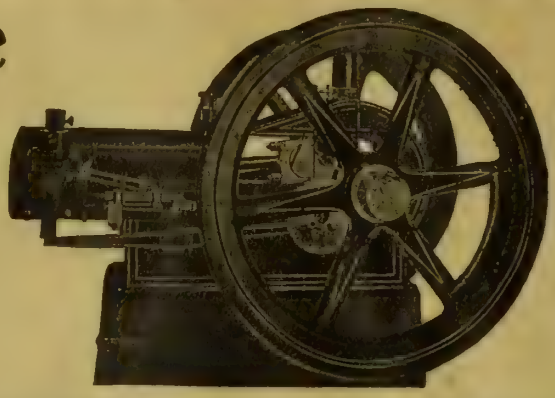

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Builders of Gas and Distillate Engines and Hoists.

Engineers and Constructors of Power Plants of every size and for every purpose.

Sole manufacturers of the Nix-Frost Crude Oil Gas Producer. (Patented). "The Cheapest Power on Earth."

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The Smooth Running Pomona Deep Well Pump

RELIABILITY.

Has passed through another most successful season's run, this being the fifth since starting.

There is no experiment in buying a POMONA PUMP. All the parts have been tried out and fully perfected. They will do the work we know and do it well.

We have records of plants that have made three season's run without one cent for repairs of any kind.

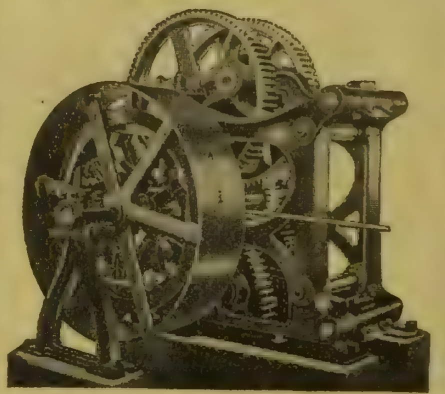
ECONOMY.

May be driven by a steam engine, gas engine or electric motor and in any case will give you the cheapest water and pay dividends on your stock.

Any Water Company going into the Irrigation business will run no chances in buying the POMONA PUMP. They are built heavy and strong. All the wearing parts are Bronze Bushed or Babbited and will last a life time with the smallest outlay for repairs.

We can refer you to customers who are operating their POMONA PUMPS for less than one-half cent per inch per hour on 200 feet lift. This is less than half what their water costs with other pumps. The same make of engine being used in both cases.

Send for illustrated catalogue to—



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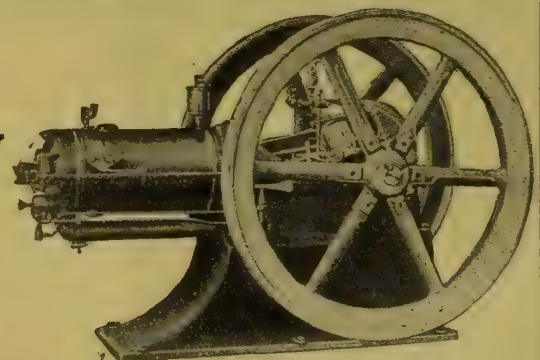
POMONA, CALIFORNIA

Branch at Porterville, California

R & V-- Gregory Engine

4 to 35 H. P.



When you are about to buy an engine for **any purpose** the first thing that comes to you is: "Now, what kind of an engine shall I buy?" After looking them all over you cannot help but say Gregory's engine is the one, the R. & V. Why? Because it is the best workmanship, best material used, the most economical, the easiest to start, no turning fly wheels, and the very best thing for the money. The same thing applies to all the different kinds of pumping machinery sold at our store. Send for description, or, better still, come and see us.

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Salesrooms: 602 to 606 No. Main St., near Plaza, Los Angeles, Cal.

More Water! Less Power! Longer Life! Less Money!

The American Pump has come to stay because every man that is using one is boosting for it. Get our prices and our guarantee before placing orders for irrigating plants. Send us your name and we will send you some interesting catalogs.

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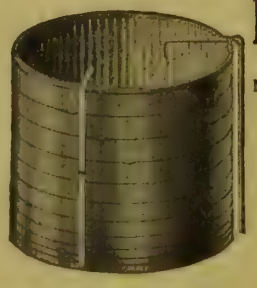

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Machine Banded Pipe, 2 in. to 24 in.! Made up ready to lay. Continuous Stave Pipe 12 in. to 12 ft. shipped knocked down. Qnality of material unaffected by change of firm name. We can fill your orders better than ever. New pipe catalog in preparation. Place your name on our mailing list and receive valuable information free. Send for tank catalog.

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Write for Prices. Prompt Delivery. Good Goods. Right Prices.

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Not too Heavy
Not too Light
But Just Right

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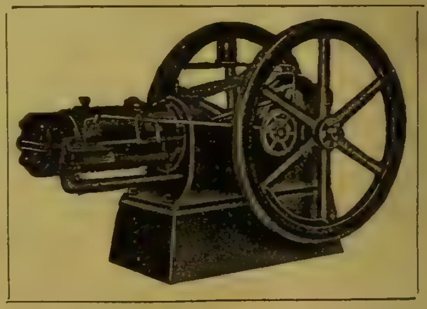

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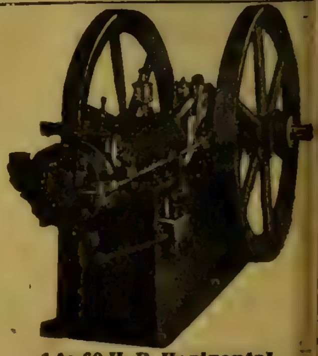

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Second Hand Irrigating Plants

Pipe, Pumps, Steam and Gasoline Engines. We have the largest A1 stock of second hand machinery on this coast, and at the right prices. Tell us what you want and we will give you our best figures. Mention this paper.

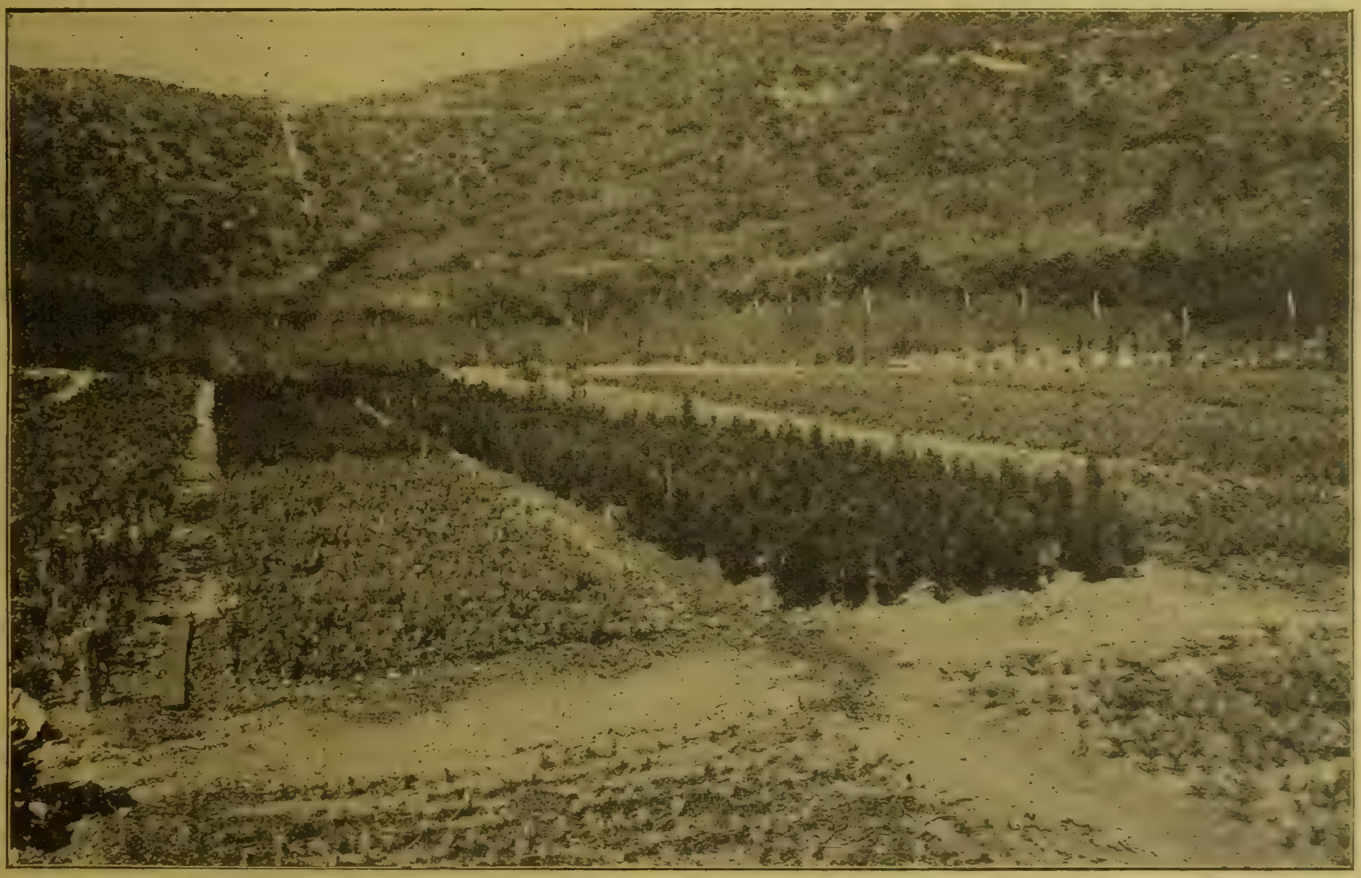
Western Machinery Company
230 Main Street, San Francisco, Cal.

California Cultivator

An Illustrated Weekly Magazine, Devoted to the Rural Home and Ranch. One Dollar per Year.

Los Angeles August 4, 1910 San Francisco

Ten Tons of Forest Tree Seed Each Year



THE U. S. DEPARTMENT of Agriculture is using this year on the National Forests over ten tons of tree seed. Most of this seed has already been planted or sown. The rest will be utilized later in the season, as favorable conditions are presented.

It takes a great many tree seeds to make ten tons. Jack pine, the most important tree for planting in the Nebraska sand hills by the Forest Service, will average something like 125,000 to the pound. Of Western yellow pine, the tree most extensively planted throughout the National Forests as a whole, 10,000 seed will make a pound. Altogether the ten tons of seed to be used this year represent perhaps 300 million single seeds.

If every seed could be depended on to produce a young tree suitable for planting, the result would be a supply of nursery stock sufficient to plant three hundred thousand acres of land, but no such result can be looked for because many seeds do not germinate. Most of the seed will be sown, either broadcast or in seed spots, or planted with a corn-planter, directly in the place where the trees are to stand.

Even when nursery stock is raised as in above scene in California, a liberal allowance must be made for loss. In the first place, a considerable percentage of the seed will be found to be infertile. If from a pound of Western yellow pine seed that contains 10,000 individual seeds, 4,000 three-year-old transplants are available for field planting, the Department of Agriculture has obtained satisfactory results.

There are now twenty-four National Forest nurseries with an annual productive capacity of over eight million seedlings. But there are many millions of old burns on the National Forests which are waiting to be restocked, and some quicker and cheaper method than the actual planting of nursery-grown trees is urgently needed. Therefore the foresters are making experiments on a large scale with different methods of direct sowing and planting, and most of the seed gathered last year was obtained for this use.

BEST FOR DEEP WELLS AND IRRIGATION WORK

Operate with Less Power, Less Atttention and Fewer Repairs than any other method

The cut shown is the Luitwieler Heart-shaped Cam, and the only reciprocating pumping mechanism with uniform application of power throughout the full stroke and uniform speed of the water pistons or plungers.

This enables successful direct geared drive, which we furnish, and particularly, our self-contained electric pumps fill a long-felt want.

We also furnish direct geared steam and distillate drive when desired.

The uniform application of power also insures long life of working parts; freedom from break-downs; continuous flow; no jar; no noise; no pit; no bother.

Pumping against a steady pressure.

Thirty-two years experience in Los Angeles with pumps and irrigation.

Send your requirements.

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OUR AGENTS:
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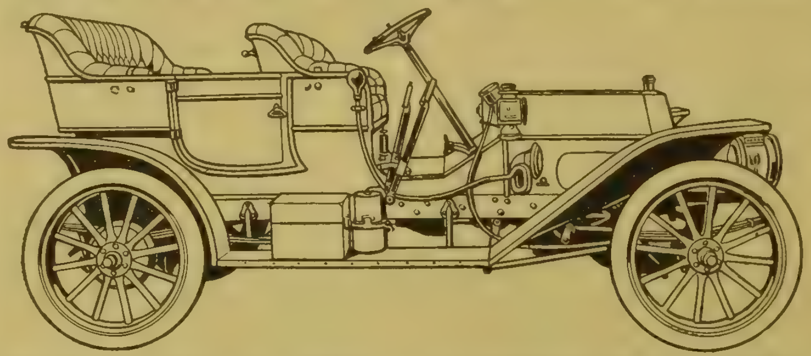
DUROCAR The Car for the Farmer



2-Cylinder, 26 H. P., $1500 **4-Cylinder, 35 H. P., $1750**

Made in Los Angeles and factory open to your inspection. Come and see us.

Both Phones **Durocar Mfg. Co.,** 935 S. Los Angeles St. Los Angeles, Cal.

Strong, Vigorous and Thrifty Walnut Trees

Well grown, true to name, and ready for immediate planting; of the New and Popular Variety, the

Placentia Perfection Walnut

A prolific and regular bearer of large, meaty, fine-flavored nuts, commanding from 2½c to 5c per pound more than the ordinary soft shells.

Choice trees, 3 to 14 feet, from 20c each and up; special low prices on lots of 200 and over. If contemplating planting a walnut grove, it will be to your interest to correspond with us at once, as the stock is limited and the price sufficiently attractive to clean it out quick.

Write today.

SAN DIMAS CITRUS NURSERIES **R. M. Teague, San Dimas, Cal.**

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Will stand the test of time — and the elements. Sunproof and rainproof. Needs no paint or repairs. Suitable for any roof— flat or pitched — any building.

Pioneer Roofing comes in convenient rolls, with everything necessary for laying. Requires no special tools — no experience.

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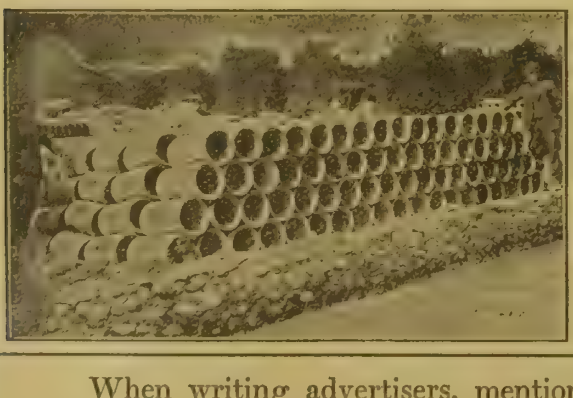

The KT Moulds

are the result of years of actual experience in the manufacture of concrete pipe or tile These moulds are the strongest on the market and the locks are so simple and easily operated that four men are able to make 560 feet of 10 in. pipe in 9 hrs. You cannot get such results from any other moulds on the market. Complete instructions for making pipe furnished free with order. These moulds are fully guaranteed We also manufacture a complete line of irrigation appliances. Write for our "Brown Book."

The Kellar-Thomason Mfg. Co., **Covina, Los Angeles Co. Cal**

"Flour City"

Gasoline Traction Engines

Made in 30 and 40 H. P.

Gold Medal Winner

1908 and 1909

The "Flour City" 4-cylinder engine was entered in the International Motor Contest at Winnipeg, in July, 1908, in competition with the leading engines manufactured in this country and England and was awarded first prize—a gold medal—for plowing more land and hauling a greater load in a given time, with less water and fuel consumption, than any of it competitors. It was again entered in 1910 and and again carried off first prize.

This should be convincing evidence to prospective purchasers that the "Flour City" 4-cylinder engine is the best

We have two of these engines on the road now from the factory which should be with us by August 10th. One of these engines is sold in advance of arrival, the other will be ready for inspection as soon as unloaded.

Be sure and see the "Flour City" gasoline traction engine before buying.

Write Us for Description and Prices

Hawley, King & Co., Los Angeles
228 South Los Angeles Street

Dealers in Farm Implements of All Kinds—Wagons, Carriages, Harness, Automobiles and Power Wagons

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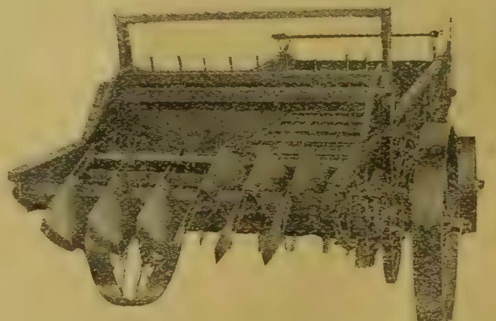
The New Idea



Just the thing that every farmer and orchardist has been looking for for years — a real Manure **Spreader** — not simply an unloader. That is why the

New Idea Spreader

takes the lead.

Why?

Because—

It will absolutely pulverize hard substances better. Gives wider and evener spreading of any class of fertilizer. Less weight. Lighter draft. Absolutely gearless, no cogs or bevel gears. Its simplicity insures less breakage. Low down and easy to load. Only perfect endless conveyor that cannot race or slip, and needs no cranking back for re-loading. Better construction and longer life. Strongest wheels, both front and rear tracking with standard wagons. Load evenly carried on both axles. Double cylinders with Pointed Teeth, preventing choking and bunching, and the Widest Range of Feed.

By removing two bolts and taking off bed you have the best farm truck on earth.

Illustrated and descriptive catalog on request. Demonstrations to responsible parties.

Western Implement Co., Sole Agents

131-133 North Los Angeles St. **Los Angeles, Cal.**

Pulp Versus Green Grass

New Sugar-Beet-Pulp Galore at

Los Alamitos Sugar Factory

Price 4 cents per ton f. o. b. cars or wagons. Takes the place of green grass as a milk producer.

California Cultivator

Vol. XXXV—No. 5 Los Angeles, California, Thursday August 4, 1910 Subscription $1 a Year

Our Horticultural Influence on the Nursery Business

An Address Delivered Before the National Nurserymen's Convention at Denver, June 24, by GEORGE C. ROEDING of Fresno, California

CALIFORNIA—what is her charm? As a native son I can only say that she possesses an attraction so strong that no matter what part of the world one visits, the name winds itself around your heart strings and the old saying, "once a Californian always one," is applicable not only to the settler who has come from distant shores and made California his home for a few years, but also to the native born, who always has a tender spot in his heart for his magnificent state.

Little did the early settlers, who came here during the gold excitement of '49, realize what magnificent opportunities were hidden away in the surface soil, requiring only to be tickled by the thrifty husbandman, to bring forth resources which would develop into proportions far exceeding in annual production, and increasing with each succeeding year, the most sanguine expectations of the miners who delved in the bowels of the earth for gold.

The possibilities of agricultural and horticultural pursuits were not fully appreciated until fully twenty years after the discovery of gold, and then only in a modest way. That this state, would eventually develop into the greatest horticultural state in the Union and that in a short period of forty years, it would demonstrate that its people were further advanced in modern methods of cultivation, pruning, handling, packing and marketing of fruits, both in the fresh and dried state, and in the successful combating of pests, is now conceded by the civilized world.

Facts cannot be contradicted, and to say that California is a veritable empire, with a greater diversity of soils and climates than may be found in any other country, is no exaggeration. To be sure this is a broad statement, but it is substantiated by the great variety of fruits produced commercially, which would not be grown on so large a scale were conditions not favorable for their successful and profitable culture.

To further comprehend what California is, allow me to say that it has a coast line, the Pacific Ocean forming its western boundary, 1200 miles in length, with an average width of 200 miles and an average length of 800 miles, bounded on the east by the snow capped Sierra Nevada Mountains, ranging in height from 10,000 to 14,000 feet, and covered the year around on the higher elevations with snow, ice and ancient glaciers, which supply the fertile valley lands below with a beautiful supply of water for irrigation purposes, the development of hydro-electric power, sufficient for turning the wheels of industry which will also furnish ample power for years to come.

Aligning the coast is a lesser range of mountains, known as the Coast Range, uniting with the Sierras in the north at the high peak of Shasta, and in the south across the Tehachapi, forming a mountain wall around the great interior valleys known as the Sacramento and San Joaquin, which have an average length of 450 miles and a width varying from 40 to 100 miles. In the Coast Range Mountains are numerous smaller valleys, all of which bear an important significance on the horticultural development of the state.

It is estimated that the state contains 160,000 square miles of territory, that the mountains and deserts cover some 60,000,000 acres of land where cultivation cannot reach, and that there are 40,000,000 acres adapted to intensive cultivation. Of this vast tract a comparatively small area is devoted to horticultural products. Although our fruit interests have expanded by leaps and bounds in the last two decades, the industry has not yet passed beyond the infantile stage and the possibilities which lie before us, I hesitate to dwell on too freely, for fear I might be termed an optimistic dreamer. Some idea of what has taken place in this short period, may be gleaned from the following: In 1873, 120,000 pounds of raisins were produced in California, and by 1884, the production had increased to 103,000,000 pounds, in1908 to 130,000,000. In 1872, the interstate shipments of fresh deciduous fruits were practically nothing, in 1894, they approximately amounted to 5000 cars of ten tons each and for the season ending 1909, 15,265 carloads.

Oranges, lemons, pomelos, classed under the head of citrus fruits, have in spite of the astounding increase in production, found a ready market in all of the states of the Union, and shipments of no small magnitude are being made to foreign countries. In 1890, the total shipments of citrus fruits, and these were confined to practically two counties, Los Angeles and San Bernardino, amounted to 2500 carloads. In 1894 and '95, they had increased to 7575 carloads; the rather slow increase in the output was due to the ravages of the Cottony Cushion scale (Icerya purchasii) which was rapidly destroying the trees, and had it not been for the introduction of the predaceous insect, Vedalia cardinalis, the citrus industry would have been wiped out of existence. In the season of 1908-09, the shipments of citrus fruits had reached a grand total of 40,592 carloads, bringing in returns of something over $30,000,000. Further statistics, illustrating the wonderful strides which have been made in all lines of fruit production, might be mentioned, but this would occupy too much of your valuable time, and I merely wish to close my statement on this subject by saying that the output of orchard and vineyard products for 1909 was $95,012,747.

Historically California horticulture owes its inception to the Franciscan Fathers, who established their picturesque Missions as far back as the year 1769, and who imported from points in southern Europe, figs, olives, oranges, date palms and European grapes as well as many other varieties of fruits, all of which found congenial conditions to their perfect development in their new home; and even to this day many of these fruits are regarded as among our best types, thus demonstrating the high order of intelligence possessed by these early settlers. It is due to their early efforts that the thoughts of a few of the '49'ers were turned from the quest of gold, to the cultivation of the soil, which prompted the planting in a limited way of orchards and vineyards. These initial steps toward horticultural progress created a demand for other varieties of fruits, hence such nurserymen as John Rock and B. S. Fox of San Jose, James Shinn of Niles, and W. B. West of Stockton started into the nursery business in the early fifties. All of these men made a decided impression on California horticulture, and although they have passed to the great beyond, I would feel that I was lacking in fealty, were I not to say a few words in their honor. It is largely due to their efforts in the introduction of, and testing of the many varieties of fruits from Asia, Europe and the eastern states, that California's horticultural interests were established on so firm and solid a basis.

I was fortunate in knowing all of these men, but was more intimately acquainted with John Rock, and as he outlived his contemporaries by many years, his scope of usefulness covered a much wider field. He was inclined to be somewhat taciturn and never had much to say of his achievements in horticulture, but it was entirely due to his untiring energy that so many valuable fruits and ornamental plants were imported from all parts of the world. His trial grounds at San Jose were a feature of his nursery and in 1884, when he started the California Nursery Company at Niles, his testing grounds were laid out on even a more elaborate scale and they stand today as a monument to his patriotic zeal to promote horticulture along legitimate lines. He was indeed the horticultural seer among our pioneer nurserymen, and introduced more valuable varieties of trees and plants, which have found congenial conditions for their successful culture, than any other one man. He possessed such a fund of knowledge and a student's inclination for careful investigation, that had he felt inclined, he could have written reports which would have proved valuable annals to the early horticultural history of this state.

B. S. Fox has indelibly affixed his name as a great horticulturist by his originating such varieties of pears as B. S. Fox, Colonel Wilder and P. Barry.

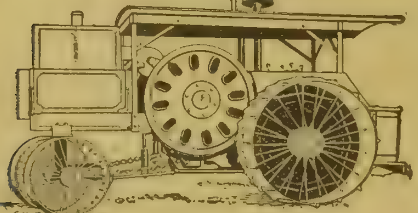
James Shinn and W. B. West, conducted nurseries which were a credit to themselves as well as to the communities in which they lived, and it can be truthfully said, that the succeeding generation of nurserymen and fruit growers owes a debt of gratitude to these men for having blazed the way for the striking and astonishing progress which California has made in her horticultural resources.

The important part which California plays in the horticultural world is illustrated by the fact that we grow every variety of fruit known to the temperate zone, and that our dried fruits not only find a ready market throughout the United States, but shipments are being made in ever increasing quantities to the European countries in which many of these fruits originated. Our production of dried fruits and raisins exceeds the production of all the other states in the Union put together.

In semi-tropical fruits, the citrus fruits take the lead, followed in importance by the fig, olive, persimmon, loquat, pomegranate, jujube, date, guava and of strictly tropical fruits, which have a promising future, might be mentioned the alligator pear (Persea gratissima.) The banana and pineapple, have been grown in favored localities, but there is no probability of their ever being grown on a commercial scale, as there are too many other places like Mexico and the Hawaiian Islands adapted to their successful culture, under much more favorable conditions. California markets annually 10,000 tons of almonds

(Continued on Page 103.)

Distillate Traction Engine



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Citrus and Sub-Tropical Fruits

FUMIGATION.

AT the special meeting of the Claremont Pomological Club recently held at Pomona, a paper on Fumigation by Elmer H. Sellers gave methods of work at the Arlington Heights orchards. Mr Sellers is foreman of the fumigation work and his success has been marked. From his paper we quote:

During the past four seasons that we have conducted our own fumigation there have been treated in the company's own groves about 210,500 trees at a cost of over $50,500, averaging about twenty-four cents per tree, large or small, and about the same acreage of private orchards, and the result is clean fruit and clean trees with no expenses whatever for fruit scrubbing in the packing houses and consequent bruising of it to lessen its market value. There is great satisfaction all around and we have found out that intelligent and conscientious and up-to-date fumigation pays, pays well, pays a hundred fold in the way of tangible rewards and results.

But fighting insect pests, whether by fumigation or other means, is expensive and the plaint is put forth that the citrus industry can hardly stand this extra tax for pest eradication, more so if it is to be a continuous performance from year to year.

Very well, it takes no very great foresight to preceive that any negligence to rout these scale encroachments now will increase expenses for that purpose to such an extent as to make this splendidly developed citrus industry sadly languish and so to speak be a monument to stupidity and carelessness.

The question now comes up if an orchard is once made clean of scale insects, how long will it stay in such condition, or will there have to be a frequently recurrent heavy outlay of money and trouble to keep it clean?

That has now become our problem. Many sections of the company's properties show signs of re-infestations from such scales as were once eradicated by fumigation and original infestations are appearing in orchards where they were never found before.

Why?

It is now well known and understood that winds are the main agency for spreading these insects to new quarters, though many other factors help to do the same.

Invariably and without exception we find our newly infested and re-infested sections to be in the path of prevailing winds, blowing from the direction of orchards which are more or less in the neighborhood and are more or less infested with scale, and which have never yet been fumigated, or, from orchards in which cheap and inefficient means were used for scale eradication, or from groves which have been re-reinfested for the same reasons.

As I have said it is one of my duties as foreman not only to expedite the mechanical or operative part of fumigation, which has now become a comparatively easy matter, but to study the larger economical side of scale re-infestation and its possible decrease.

The slogan now is: How can expenses for scale eradication be materially reduced if fumigation must be resorted to to conserve the fruit and trees?

Orchards from which our re-infestations emanate are not under our jurisdiction, being controlled by other owners and until they are clean of scale, re-infestation will simply be of regular and continual recurrence. Had such orchards been cleaned up when ours were, expenses for elimination of scale re-infestation would practically be nil, as orchards fumigated three and four years and not exposed to infested orchards have had no fumigation expenses charged against them.

Fumigating such groves only of enterprising and willing owners and leaving those of unclean or unwilling persons in the neighborhood or allowing groves to be only partially and imperfectly cleaned up by cheap methods is only temporizing with the reduction of scales and expenses for such; it may help the matter some but does not eliminate anything.

Fumigation, as we all too well know, is expensive; many claim they cannot, or rather, will not, afford it, and as long as the fruit from their infested areas is readily accepted by the packing houses no thorough cleaning up will be attempted unless they are compelled to do so by the powers that be, which is a tedious, disagreeable and unsatisfactory process.

A scale infested orchard among clean ones is a public nuisance and menace; it brings unnecessary expense and damage to neighbors and is a decided drawback and detriment to the citrus inustry and must be made harmless.

This matter of scale eradication and control would seem really simple if co-operation and concerted action were brought to bear upon any recusant parties. Your most worthy horticultural commissioners' duties are to show you how best to overcome insect pest spoliation which spells so much financial loss to you. But they are badly handicapped in their work when not all and every one interested and concerned in this matter extends a helping hand to them.

The scales which are now engaging our attention so much have most intricate and pervasive ways of spreading and floating into everybody's trees, rich and poor alike, at all times of the year; they are endowed with most remarkable facilities for quick and frequent propagation and then develop quite admirable staying qualities, yet homesickness seems to be one of their vices, for they dearly love to return quite often to scenes of former activities. Before all trees can be cleaned up they are round again like the proverbial beggar at the back door.

We know now, thanks to the investigations of Mr. Woglum and others, that with the latest methods of scientific fumigation with hydrocyanic acid gas we can eradicate or kill scale on a given tree with practical certainty. Therefore, it seems, all we have to do is simply to cover all our trees with tents and make the proper dosage of gas under them and

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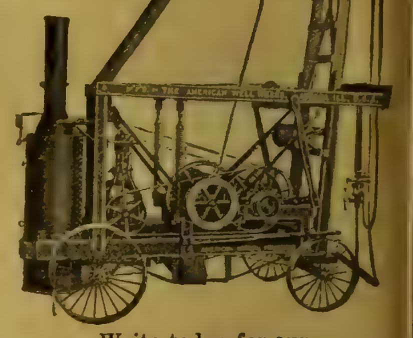

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THE SILVA-BERGTHOLDT COMPANY
180 Orchard Street Newcastle, Cal.

Owens Valley Land
See Announcement on Page 11

we have it. Very simple, is it not? Let us all go right off and do it. If one tree can thus be cleaned up, surely, many hundred thousand trees can also be thus cleaned. We thought so once, but we know better now. The trouble is the trees do not stay clean and free from scale.

Reinfestation plays its part—a most important part—in the economy of scale control as explained before.

This matter of scale eradication and control then rests upon up-to-date, compulsory, wholesale fumigation by districts by co-operative communities. Many more fumigation outfits must be in commission under competent surveillance and intelligent direction. Every thousand acres, or so, should have its own set of tents and apparatus. Such fumigation districts should be mapped out with a view to a solid, contiguous and adjoining mass of acreage with no breaks in it whatever that would be neglected and thus become new distributing sources for reinfestation. Such districts should be attacked first on the prevailing windward side and nothing should be given the go-by, unless irrigation temporarily interferes.

During this mass fumigation trees in groves treated should be thoroughly examined for possible reinfestations not later than twelve months after fumigation and the first sporadic sign of scale appearance should be immediately attended to to prevent any freshly hatched scale from starting on a journey to other trees and groves. All fruit picked should be examined by those in charge for any signs of scale as much as can be done and reported. We are doing this in our own groves and pruners are also instructed to report any scale signs coming across their notice. We also do considerable inspection in the lemon orchards ourselves, as scale is far more rampant in such than they are in orange trees.

The more fumigation outfits that are in proper and honest operation, the more scale will be killed off at one time; the more scale there is destroyed so much less propagation and spreading out again follows and, consequently less trouble and less expense. Any reasonably intelligent fruit grower can figure out from this proposition a possible millennium ahead; if he is not progressive enough to be reasonably intelligent he has no business to be the owner of a single tree.

We must have clean orchards; clean orchards mean progress, financial progress, which is, as I understand it, a consummation devoutly prayed and yearned for by all good citrus growers and some others not so good.

IMPORTANCE OF ORANGE TREE PRUNING.

Prof. Wickson, whose letter of approval of the principle and method of practice in pruning old orange trees, of which I wrote in your issues of May 26 and June 16 and 30, I herewith enclose, has been kind enough to accede to my request that he permit its publication.

While I personally appreciate the hearty support of the foremost authority in horticulture on the Pacific Coast, I feel that it is proper and incumbent on me to call attention to his views on this subject which he considers "one of the most important matters that has ever been announced in connection with our citrus industry," that my fellow-growers may investigate and practice what will surely be one of the means of renewing decadent orchards.

It is surely time for scientists and practical men to consult on a subject of so great importance.—Chas. R. Paine, Redlands.

Prof. Wickson's letter to Mr. Paine is as follows:

"I am exceedingly glad to have your letter of July 9th and the articles from the California Cultivator which you kindly send me. I have known for a long time that you were pursuing the rational process of treating old orange trees which you describe in these articles. It seems to me that it is one of the most important matters that has ever been announced in connection with our citrus industry. It is particularly true in principle, and if intelligently introduced into practice would bring all our old trees into a condition of superior thrift and promote the production of better fruit. The idea of allowing these old trees to become dark, weak, and unproductive in the center, is irrational and reflects no credit upon our pomological energy and intelligence. You cannot de better than to contend for the recognition of the treatment which you have demonstrated, and get as many people as possible to study the trees which you are handling by your method. It is not only rational as applied to citrus trees, but the principle holds in the treatment of nearly all our old fruit trees to the extent warranted by their nature, manner of growth, etc."

SATSUMA ORANGE.

Touching upon the planting of the Satsuma orange in many Southern Gulf sections, Coleman's Rural remarks:

The Satsuma orange, one of the mandarin class, introduced from Japan, is the earliest and at the same time one of the hardiest oranges grown. Owing to these qualities, it is gaining considerable popularity in the South. But one peculiarity of the Satsuma orange is that it is worthless as a fruit bearer unless grafted or budded on Trifoliate orange stock.

Sour orange and sweet orange have been generally used as stocks by growers of citrus fruits in the South, and during recent years the hardy Trifoliate orange of China and Japan has come into prominence as a stock. For soils to which it is adapted it may be used with excellent success, but it is not adapted to light sandy soils. It has been found in practice that certain citrus varieties behave differently when grafted on stocks of different species. This is particularly true of the Satsuma orange. Grafted on sweet or sour orange stock it is worthless, while on Trifoliate stock it succeeds admirably. As the Trifoliate stock is adapted only to fairly rich moist soils, the mistake is sometimes made of using the other stocks named with a view to growing Satsuma oranges on light sandy soils. Some nurserymen have grafted Satsuma orange scions on sour orange stock and are now offering them for sale. In order to warn growers against a serious mistake, the United States Department of Agriculture has issued a circular prepared by Walter T. Swingle. Mr. Swingle says: "It is no exaggeration to say that he who plants a Satsuma orange tree grafted on sour stock might better bury a five-dollar bill and burn the tree, which, if planted, will linger along for years, only to be finally dug up as worthless." He tells how the intending purchaser can distinguish between the Trifoliate and the sour-orange stock, and offers the assistance of the Department to those who desire to make sure they are not deceived.

Notice to Orange Growers

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We absolutely guarantee perfect working of the plants, and will furnish to buyers license to operate, as well as instructions for successfully canning oranges that will keep, that will please, and that will sell at a big profit.

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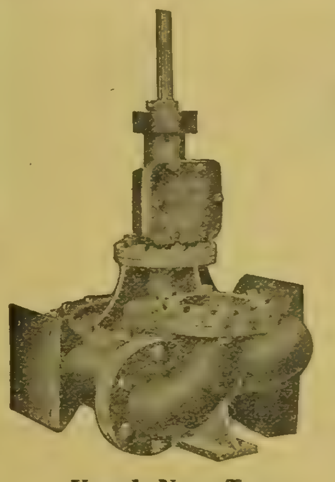

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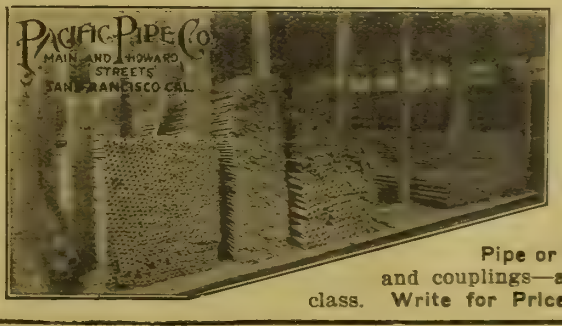

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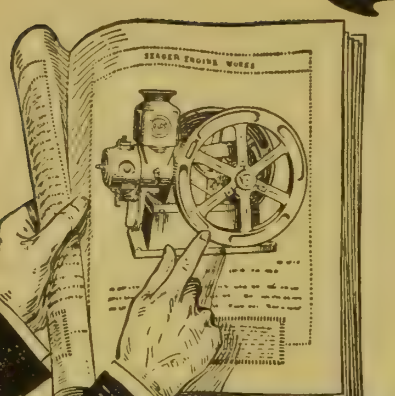

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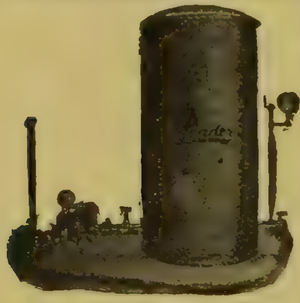

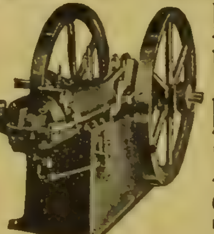

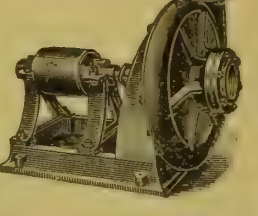

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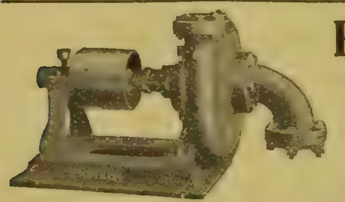

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These grafts were planted in nursery where they were being rooted and next year the rooted grafts will be transplanted to ten-acre blocks at Davis and at Fresno, where they will be grown in vineyard form to continue and complete the tests.

The main object of the tests is to determine what are the best stocks for the conditions of soil, climate, and variety in California. They include several series having somewhat different phases of the problem in view.

One series consists of 13 varieties of vinifera, including the table and wine grapes which have shown themselves the most valuable for the different regions of California, grafted on eight varieties of resistants which have shown the most promise of suitability for the same region.

Another series consists of six varieties of vinifera, viz., Burger, Zinfandel, Muscat, Emperor, Cornichon and Sultanina, each grafted on 17 varieties of resistant stock. These vinifera varieties are all of great importance in California and the need of knowing the best stock for each is very pressing.

Another series is especially devoted to the testing of raisin grapes which have been grafted on 10 of the most promising resistants.

For the purposes of these tests, a grafting house, a nursery and a vineyard have been established at the University Farm, where they are available for the inspection of all interested.

During the coming autumn it is proposed to graft a large number of vines in order to give students instruction and practice in the various operations of grafting, callusing and nursery work. Especial attention will be given to the method which was used with excellent results in the work last year of callusing in moss in a warm room.

BE KIND TO THE TOAD.

A pamphlet recently issued by Secretary Wilson, of the Department of Agriculture, pays a glowing tribute to the toad. According to this high authority, few creatures of its size have suffered more from false witnesses. It is not true that it causes warts, poisons infants or spoils cows' milk. On the contrary, it has an amiable disposition, a good singing voice—for those who like that sort of thing—and, above all, most commendable industry.

An able-bodied toad eats $19.44 (wholesale rates) worth of injurious worms and insects every season. It is a most efficient ultimate consumer, and it likes best those things which the farmer likes least. It is home-loving and very fond of children—its own children. No farmer or suburbanite should try to get along without a couple of good toads.—Globe-Democrat.

WEEDS!

Did you ever stop to think of the tax you are paying to keep up the weed crop? If the State should levy a tax on your crops, equal to 25 per cent of the value, you would rebel in righteous indignation. Wouldn't you? Yet a good many of us permit a stand of 25 per cent of weeds to occupy our fields and think we are doing pretty good farming too.

Why not grow grain or alfalfa, or sugar beets or spuds, or some other good crop where that weed tax is now growing? The weeds give no return. They draw more heavily on the water supply and plant food supply than paying crops. Paying crops and weeds cannot occupy land at the same time. Let us grow paying crops and get profits rather than pay taxes.

Pound for pound, the plant food required by crops and by weeds is almost the same, but weeds are better food gatherers. The greatest difference comes when the question of water arises. Weeds not only require more water but are able to get it. From 300 to 700 pounds of water are used in producing a pound of dry matter in our common crops. Weeds require even more. If it comes to a contest as to which will get it, the weeds win.

Reform the weed.—Alvin Keyser, Colorado Agricultural College.

WANTED—FARMERS.

Uncle Sam is looking for 500 practical farmers who would like to own homes of their own. The Government now has about five hundred farms awaiting settlement under the various irrigation projects in the Northwest. These farms vary in size from 20 to 80 acres of irrigable land, depending upon location. In many sections a tract of grazing land has been included in the farm unit, bringing the total up to 160 acres.

There is no drawing or any element of chance in applying for one of these farms. It is only necessary to make a homestead entry at the local Land Office. The farms are free to every bona fide homeseeker who is entitled to make a homestead entry, the only charge besides the regular land office fee for filing being the actual cost of getting water to the land. Payment may be made in ten annual installments, without interest.

Owing to the rapidly diminishing area of unoccupied public domain, opportunities to secure desirable farm land are becoming more rare each year, and it is doubtful whether the present favorable conditions will ever occur again.

The farms now awaiting settlement include a wide variety of soil and climate. If you desire to engage in general farming, or to specialize in the growing of apples, alfalfa, sugar beets, garden truck, stock raising, dairying, raising poultry; or if you are a professional or business man and wish to locate in a new town in a growing agricultural community, write to the Statistician of the United States Reclamation Service, Washington, D. C.

The hot spell did much damage to alfalfa near Yuma.

HORTICULTURAL INFLUENCE.

(Continued from Page 99.)

and walnuts and this promises to be supplemented before many years by the pecan, which thrives very well indeed in moist locations in the interior valleys. Experiments extending over a period of years have demonstrated the adaptation of the paper shell pecans, and I predict that inside of twenty years the culture of this nut will be one of our important industries. The pistachio or green almond, so extensively grown in the countries aligning the Mediterranean, is another nut which will do well in the interior, its value to be eaten out of hand and for the manufacture of the famous pistachio candy will cause it to be extensively planted. The chestnut and filbert are well adapted to our coast counties and only wait the demand to encourage them to be planted. Our wine and brandy production is expressed in figures of almost 50,000,000 gallons annually. The fact that we grow the identical varieties of grapes that are raised in Europe, accounts for the demand which is largely from the foreign residents for this product. It is not necessary for me to dwell on the fact that the adaptation to our soils and climate of such a great variety of fruits, has in the natural course of events drawn not only on the nurseries of this state, but also those of outside states to meet the demand.

In many respects the nursery business in California is conducted on an entirely different basis from that in any other section of the United States. Once one of your leading nurserymen from the East, while on a visit to California, made the remark; "People in your state buy trees because they want them, while with us in most cases we actually force them to engage in the fruit business." The fact that California is engaged in fruit growing on a commercial basis has created a call for varieties, many of which have become standardized because they possessed merits which caused them to be in demand either for shipping, canning or drying. Another strange feature about the trade in California is that the wholesaling of nursery stock has never assumed any magnitude, largely because the purchasers of trees were insistent on knowing by whom the trees were grown and in some cases would even demand to know where the buds were taken before they would buy. The sale, for practically all the trees grown, is confined to the state, and this makes the business all the more hazardous, because if trees one year old from the bud are unsold at the close of the season, they are invariably placed on a brush pile for fuel purposes. It is simply beyond calculation for a nurseryman to know in advance what class of stock to grow, because the demand is confined to the varieties of fruit which sold at the highest prices during the previous season.

Whenever the shortage of peach trees, as an illustration, becomes acute, orders immediately commence to pour into eastern nurseries, but it usually happened that they could not supply the varieties and this, of course, was a decided disadvantage; hence it is only natural for the nurserymen to infer that there was a demand which must be met; they therefore secured buds of leading varieties from California, and finally, after having a good stock of these to offer, sales lapsed for some unknown cause. To illustrate why this occurs, I wish to say that I have known years where cling peaches could not be sold to a grower at $80.00 per thousand, and the very next season, because the canneries were paying top prices for this variety, planters would willingly pay $250 to $275 per thousand for the very same trees which the year before they would not be induced to buy at any price.

The commercial aspect of the business has made it necessary to secure buds from bearing trees, which were in many cases infested with insect pests, making it obligatory for a nurseryman, in order to protect his interests, to wash and fumigate all of his buds, scions and cuttings. Even with all of these precautions, our horticultural laws with every succeeding year have been increasing in severity so that it has finally come to the point that ordinances have been passed that positively prevent the shipment of certain classes of stock, regardless of how clean it may be, between neighboring counties.

At this point I wish to remark that the nurserymen in the middle west and eastern states, have at times been of the opinion that the California nurserymen were at the bottom of all the laws which prohibited the importation of nursery stock from other states. This is entirely incorrect. To prove it, I wish to quote briefly from a paper read by me before the Fruit Growers Convention in Hanford, December, 1908: "Is it right and just when stock from outside sources is brought in without any apparent restriction, to enforce ordinances which arbitrarily prohibit the shipment of stock between counties without inspection? This comparison is made to show how much more difficult it is for a nurseryman to conduct business in his own state, than it is for those whose interests are not so closely united." I do not wish to be misunderstood in this matter, for I am in favor of our horticultural laws being enforced, in so far as they are based on common sense principles, but when an imaginary line is drawn preventing the shipment of nursery stock without inspection because a pest may be known to exist in a certain county, then it is high time for the nurserymen to act as a unit and fight all such obnoxious measures. The necessity for careful and painstaking work on the part of our horticultural officers, however, is imperative, when it is borne in mind that $250,000 is paid out annually in Los Angeles and neighboring counties alone for fumigating citrus trees.

In conclusion, I want to say a few words in honor of that distinguished plant breeder Luther Burbank. A more sincere personality, it is hard to imagine; at once difident and shy, he is nevertheless one of the giants in his chosen field. As most of you know, the scientific temperament is hardly adapted to business, For this reason it is not fair to measure a man like Burbank along ordinary lines. I have been reasonably familiar with his work for years and can assure you that it rests on solid ground; the results will justify the statement that as a stimulating force in the study of plant life, there is no name, in the annals of modern horticulture, that has caused so wide a discussion in fruit, nor one who has more forcibly directed the possibilities in the betterment of our fruits and flowers.

The New Jersey station reports that the average yield per annum of green clover to the acre is 14,000 pounds, and of green alfalfa 36,500 pounds; the protein in the clover is 616 pounds and in the alfalfa, 2214 pounds; one ton of alfalfa has 265 pounds of protein, and clover only 246 pounds. But alfalfa will produce three, four, or more cuttings each year, while clover will produce one or at most two. Further, clover will ordinarily survive but two years, while alfalfa will last from ten to one hundred, thus saving many plowings and seedings. It is also estimated that the stubble and root-growth of alfalfa are worth at least four times as much for humus as are those of clover, while the mechanical and other beneficent effects of the long alfalfa roots far excel those of clover. The alfalfa field is green for pasturage a month earlier in the spring than clover and may be mowed a month earlier. It starts a vigorous growth at once after cutting, covering the ground with its luxuriant foliage.—From Coburn's "The Book of Alfalfa."

As land values increase and the farmers and dairymen come to more fully appreciate the worth of green feed in winter, the silo grows in estimation. Eastern farmers who keep cows or young stock of any kind use the silo more or less, to conserve for winter the value of both green grass and corn. Alfalfa makes an excellent silage, but its peculiar quality of retaining its green food value, as hay, when properly cured, makes its ensiling much less a necessity. Alfalfa hay taken from the mow in February, green, appetizing and nutritious, falls little, if any, short of serving the purposes of silage.—From Coburn's Book of Alfalfa.

Husum, Washington, reports its Spitzenberg and Newton apples the best ever.

Sanger peach growers are being paid by the cannery $25 to $27.50 per ton.

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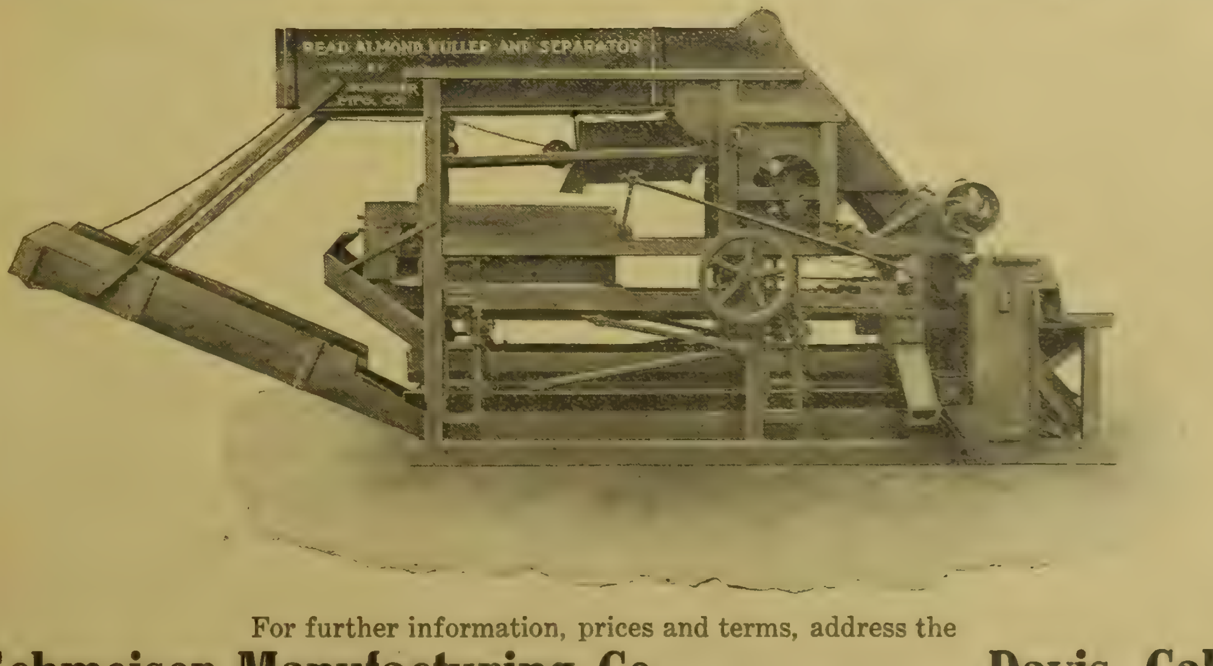
Owens Valley Land
See Announcement on Page 115

The Read Sure Pop Almond Huller and Separator



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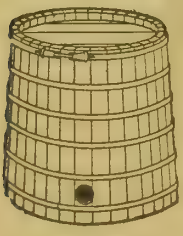

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Water Tanks, Wine Tanks made from carefully selected stock by careful and experienced workmen. "Tanks that are well made last a long time." It will pay you to get my prices before buying.
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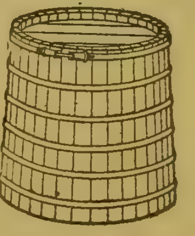


Water Tank

Live Stock and Dairy

Dairymen and stockmen are requested to write of their experience. Mrs. Sherman is always willing to answer queries and this, with experience of other workers, will make this department of greater value.

TUBERCULIN.

By Mrs. Minna E. Sherman.

THE idea that one can pick out the diseased cows in a herd by the eyes or by physical examination dies hard in the mind. Before a cow reaches so advanced a stage of this disease her skim milk has doubtless infected a number of the calves and her presence has spread the disease among others of the herd. A friend sends me a clipping from The Tribune Farmer of July 7th marked, "What do you think of that?" The following is the vital part of this article and it seems to me to be based on an idea rather than actual facts, as I understand them.

[The writer, in the article which Mrs. Sherman sends goes at some length into the claim that Wisconsin has more tuberculous cattle than any other section and that it has done more tuberculin testing than any other section. There is also a lone resolution passed by the Missouri Veterinary Association in which the same claim is made and, of course, the claim set up that it is because the work was done by inexperienced farmers and not by professional veterinarians. The writer in the Farmer then adds: "When all such talk is analyzed it shows a great desire to hold an option on the use of tuberculin and compel the farmer to employ a certain class of veterinarians to do the work for them at a large fee for doing a very simple thing. I believe that Wisconsin, where tuberculin has been the most used, has more tuberculosis than in an equal area where tuberculin has not been so extensively used. It furnishes ample proof of the contention I have repeatedly made that the general, indiscriminate use of tuberculin has been disastrous to the cattle industry of state and nation where it was put into practice. Use it when and where there is seeming need to use it, and stop there. More and more the truth is coming to the front, and that is that tuberculin is not the harmless culture it has been thought to be. It will cause and has caused inert and harmless bacilli to become active."]

What is Tuberculin?

This seems to be rather a misunderstood substance and a few words about it may not be amiss. Dr. Robert Koch was searching for a cure for tuberculosis and made this serum for treatment. It proved a failure in the human subject, though at first it was heralded as a cure. In the early stages of the disease it seemed to help, but it was discovered that later on it only accelerated the inroads of the disease it was intended to cure. Now at Dorpat, Russia, Prof. Gutman was using tuberculin on patients. He noted a regular rise and duration of temperature and found it could be relied on to take place in every case. He then turned to experimenting on cows and making postmortem examination he demonstrated the truth of his theory of its value in showing the disease. He announced this discovery in 1892 and today it is used in most of the greater dairy countries.

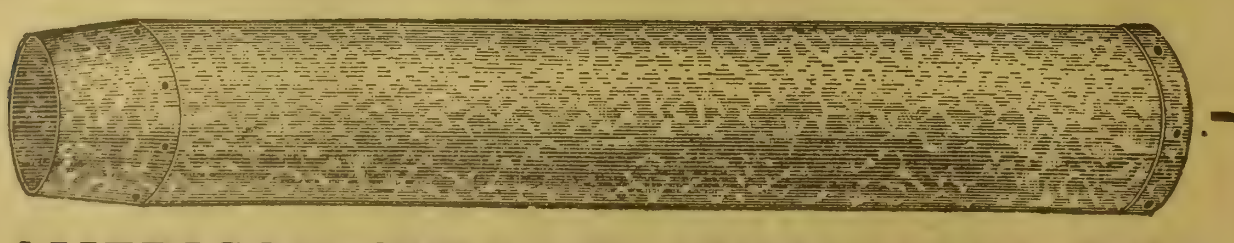
How Made.

It has been known that bacilli are self limiting to a certain extent. They live and secrete by their life activities certain toxins that act in turn as poison and bring to an end their life. Tuberculin is made by taking the active bacilli and placing them in the serum or white colorless portion of the blood or in meat juices, and placing the tubes in an incubator holding it at blood heat for several weeks until the bacilli have filled the mass and the toxins have been fully excreted. Then the tube is placed in a receptacle and the temperature raised to 250 degrees Fahrenheit and held there for forty-eight hours. This kills any remaining bacilli. The mass is then forced by air pressure through a porcelain filter and then again raised to 250 degrees Fahrenheit. The tuberculin is then dissolved in glycerine, with a little carbolic acid added, to a 10 per cent solution when it is ready to be placed in the small bottles and sealed for commercial use.

Tuberculin Testing.

When the dairy was running here on the ranch an opportunity came to buy a nice young herd of Shorthorn cows all dry at the time. Fifty-eight head were selected and placed on a pasture ten miles away. A competent Scotchman and his wife took charge of them. One cow looked thin and died when she calved two weeks after purchasing them. She was buried before we were informed of her death, and then we were told that another cow looked badly and was coughing. We went to see them and I said, "Kill her at once and we will see what is the matter." My father went with me the next morning and examined the butchered cow and said consumption. We buried her and came home feeling pretty blue. Then came one of those coincidences that make one believe in a Heavenly Father. A letter was received from one of the younger men of the family from Paris telling of the wonders that he had just heard in the lecture room, of the discovery that tuberculin would show the disease in cattle. A telegram to Philadelphia brought in line old friends among the medical men and in two or three weeks we were equipped with tuberculin and a knowledge of how to inject it.

Do your cows milk hard? Send 50 cents for teat expander. O. J. Weber Co., 225-227-229-231 East Sixth St., Los Angeles.



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Using.

Then it was thought that it could not be used on a cow until she freshened, so we, my father and I, tested each of the cows among those Shorthorns until thirty-eight were put under the alfalfa blooms—we did not have any daisies or we might have been more poetical. The other twenty did not react then nor at any later testing. The first eight or ten we performed autopsies on, but after that the Scotchman understood it and would save the piece of diseased organ for my father to see. Now excepting the first two these cows were as sleek and fat as any cows. I bought them for thirty-two dollars a head and was offered forty before I had them a week. No one could see they were diseased.—M. E. Sherman.

THE AYRSHIRE COW.

During the past few years, since the Ayrshire Breeders' Association instituted official tests conducted by and under the supervision of the Experiment Stations, the Ayrshire cow has made rapid progress in popularity, as the perfect dairy cow. This official testing has brought to the front a class of dairy Ayrshires, noted for utility, and has more and more influenced the breeders in trying to eliminate any defects she might have, and bring to the front her remarkable qualities as a profitable dairy cow for every day service. One hopeful feature of the breed is that she has built herself up on all lines of dairy utility in dairy conformation and dairy lines of beauty, and the Ayrshire cow stands today unique among the dairy breeds, with no aristocracy of family distinction, but maintains her popularity from her individual and breed qualities.

While there are minor differences in her appearance, under different breeders, and in different countries, the Ayrshire is an Ayrshire wherever found, and shows the same strong breed characteristics, of shapely udder, strong constitution, and vigorous appetite, shows herself to be a great dairy cow under any and all conditions, and carries the type of the breed in her every act.

In Scotland, in Canada and in the States she has been bred not for family booms, or individual phenomenal excellencies, but all along the line she has been pushed as a breed of uniform dairy superiority.

This is I believe greatly to her advantage, and greatly to the advantage of all purchasers of Ayrshire cows, for the uniformity of her dairy excellence makes all buyers pleased with their purchases and maintains the general good name of the Ayrshire cow. In studying the results of the testing for advanced registry the two facts are strongly brought out that there is great uniformity in the breed in production at the pail, and while we cannot boast of any world beater in one or two individual cows, we rejoice in the fact that there are none very poor, the general run being from good fair cows to very superior ones.

The quickest, surest, and most satisfactory way to improve the breed and bring it to the highest perfection is to use only strictly first class bulls, from the best cows to be found, cows with great dairy capacity, shapely udders and long teats, and to this end all breeders of Ayrshires can do great work for the breed by killing all bull calves that are not from grand cows, with shapely udders and long teats. The breeders of Ayrshires are the ones on whom rests the future of the breed.—C. M. Winslow, Brandon, Vt.

In selecting a brood sow it is important that the number of pigs she farrows, the number she raises, and her attitude toward them be determined before purchasing.

Cream Separators, all sizes and prices. O. J. Weber Co., 225-227-229-231 East Sixth street, Los Angeles.

TEACHING THE NOVICE TO MILK.

Answering the question of a freshly installed "farmer" as to how he can learn to milk, the Rural New Yorker says:

If you will buy a gentle easy-milking cow, you will find little difficulty in learning to milk. Some one of experience could choose such a cow for you, and give a practical demonstration of the art. In milking always place the stool on the right hand side of the cow, and near enough to her, so that you can easily reach all parts of the udder. Do not crowd up too close, or a slight sway of her body in your direction might disturb your centre of gravity, causing it to fall outside the base of your stool. The pail is usually held between the knees, or on the "rest" of a stool made for the purpose, but may with safety be placed on the ground or floor, if the cow is quiet and gentle. Many old milkers wet the teat with milk before beginning. This is a useless and dirty habit, and should be avoided. If a cow's teats are hard or chapped, they may be softened with a little vaseline. Most milkers milk the two fore-quarters together and the two hind-quarters together, but this is unessential. When the teats are close together it is often easier to milk "cornerwise," for instance taking the right back teat with the left hand and the left front teat with the right hand. Avoid twitching and pulling the udder—the squeeze is what draws the milk. Squeeze from the udder down. If the whole hand is shut together at once, the milk will be forced back into the udder, instead of into the pail. The idea is with each pressure to shut off the flow above and force the contents of the teat into the pail. If the hand is closed naturally, the little finger being the shortest, will be the last to touch the palm, so the human hand seems to be a natural milking machine. Before leaving the cow, each quarter should be gently squeezed between the hands, reaching well upon the udder and working down toward the teat. This will materially help in getting all of the milk, which, of course, is very necessary. A gentle, easy cow, and a little practice will soon solve your problem.

For the first weeks of a pig's life the mother's milk is its drink as well as food, and therefore in caring for suckling sows it should be the aim to so feed them that milk of only medium richness will be furnished instead of a limited supply of that which is extremely rich, the latter being less healthful and more liable to cause thumps, scours and unsatisfactory growth. It is only a law of nature that pigs should make more economical gains through the milk of the dams than in any other way, and it is also true that the sow will furnish nourishment for her young at less cost for the raw material than any other animal on the farm. A sow's milk is rich in solid matter, which amounts to 17 to 20 per cent. On a comparative basis of 1,000 pounds live weight a cow giving 3 gallons of milk a day will give in the milk 1 pound of fat and .77 pound of protein daily, while a sow's milk will yield 1.26 pounds of fat and 1.1 pounds of protein a day on an average. In composition sow's milk in comparison with cow's milk is very high in total fats as well as solids.—From Coburn's Swine in America.

Anthrax Cure, Milk Fever Outfits. See O. J. Weber Co., 225-227-229-231 East Sixth street, Los Angeles.

Warranted to Give Satisfaction.

Gombault's Caustic Balsam

Has Imitators But No Competitors.

A Safe, Speedy and Positive Cure for Curb, Splint, Sweeny, Capped Hock, Strained Tendons, Founder, Wind Puffs, and all lameness from Spavin, Ringbone and other bony tumors. Cures all skin diseases or Parasites, Thrush, Diphtheria. Removes all Bunches from Horses or Cattle.

As a Human Remedy for Rheumatism, Sprains, Sore Throat, etc., it is invaluable. Every bottle of Caustic Balsam sold is Warranted to give satisfaction. Price $1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. ☞Send for descriptive circulars, testimonials, etc. Address

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Are given the preference by 80% of California Stockmen because they give better results than others do.

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Handy, Automatic **HAME FASTENER**

Do away with old hame strap. Horse owners and teamsters wild about them. Fasten instantly with gloves on. Outwear the harness. Money back if not satisfactory. Write today for confidential terms to agents.

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Registered A. J. C. C. Jerseys

St. Lambert and Flying Fox Blood. Margery Golden's Fox heads the Herd. Young stock for sale. GUY H. MILLER, Prop., R. 3, Modesto, Cal

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Thoroughbred Holstein Bulls and Heifers

Thoroughbred Berkshire Boars and Sows

JOHN LYNCH
Breeder of Registered Shorthorns
MILK STRAIN
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Owens Valley Land

See Announcement on Page 115

No Hoof, No Horse

U. S. statistics show that 80 per cent of all horses are lame and that 80 per cent of the lameness is caused by hard and contracted feet. As a hoof softener, toughener, nourisher and grower there is nothing equal to

Eshelman's Wool Fat Hoof Healer

A horse's hoof is from 60 to 70 per cent water. Grease and water will not mix. There is no grease about Wool Fat. It mixes readily with water, is very penetrating, and while a great medicine of itself, it also acts as a vehicle to carry to the afflicted parts the other medicinal properties of the HEALER. It is absorbed into the skin and gives natural stimulation and nourishment to the hoof. There is nothing that can compare with it for this purpose, nor as a remedy for contracted hoofs, split hoofs, quarter cracks, mud fever, corns, grease heels, and for all kinds of sores and cuts anywhere on any stock. If you have tried it, you know that this is true. If you have never tried it, it will surprise you with its power as a healer and restorer. It is not a new remedy, but has been on the market in the East for many years, where it has given the greatest satisfaction.

4 oz. package, 25c; 12 oz., 50c; 32 oz., $1.00; 5 lb. pail, $2.00; 10 lb. pail, $3.50. It is easy of application. Directions with each package.

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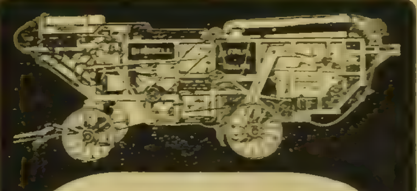

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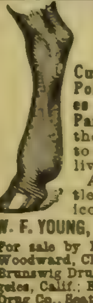

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The Ornamental Garden

THIS MONTH.

MANY annuals, especially pansies and stocks may be planted during this month. Prepare beds out of doors in well enriched light sandy soil. Cover seed very lightly. A light leaf mold or some form of mulch sprinkled over the top lessens liability of baking. In addition, in warm, dry sections a layer of burlap over the ground, sprinkling to be done on top of burlap, is often found desirable. Of course the burlap must be taken off as soon as the young plants begin to appear.

Verbenas, petunias, Chinese pinks, salvia, carnations, and other seed may be sown in the ground or in flats in greenhouse. If sown in greenhouse, take care that there is no damping-off. In lieu of the greenhouse, success is often obtained by common sash leaned against building. Be careful not to let plants scald or burn.

Divide violets or secure new stock. Mulching will prove profitable. Goldenrod is beginning to bloom and requires plenty of water from now on, as does golden glow. These two plants give glory to the fall months and should have more general culture. Above all bear in mind that the soil is getting dry. Abundance of irrigation is necessary for best results.

A PERFUME GARDEN.

"A very little space will suffice to raise the sweetest of the perfume plants—this term being understood to mean those plants which in their flower, branch or root furnish a permanent fragrance, in a form immediately available for use," says Grace Tabor in Woman's Home Companion.

"Lavender comes at once to every one's mind in this connection, the famed sweet lavender of ancient linen room and press being probably the most widely known of all these plants, familiar even to those who have little idea how it grows.

"The seed is listed, but it is better to buy the plant already started, for seedlings do not run true to variety. The lavendula vera is the true sweet lavender; give it an open, light, rather dry soil and full sunlight and free air.

"It is shrubby and grows from two to three feet high; its blossoms come in July and August, and are exquisitely fragrant. Cut the flower stalks with plenty of the surrounding green —the fragrance is in green corolla and even in leaf and branch—in clear weather, in early flower, and early in the morning before the dew is off the plant, and hang immediately to dry."

REPOTTING PALMS.

Potted palms grow best in very light porous soil. That made with a mixture of one part each rather moist sand, garden soil and fine old manure appears to be best. The pots should be well filled with drainage holes, so the water is never retained but drains away promptly. When growing, the soil should be kept moist at all times, but seldom soaking wet. In repotting palms it is good only to use a single size larger than the pot in which it has been grown. A mistake in overpotting is often made, resulting in a decrease of vitality. Another common mistake is to pot too deeply, making the bases of the stem reach below the soil level. Palms naturally grow far above the soil sending their roots down so that there are air spaces between the roots. If you repot your specimen in a smaller pot, use light soil and keep the base at least two inches above the surface and you will have no further trouble. —Rural New Yorker.

IMPROVING AN OLD LAWN.

To renovate lawns that have become worn out by neglect or other causes, and where it is not convenient or desirable to renew by plowing up, they may be greatly benefited by running a light harrow over, if the surface is large, or by a sharp steel rake for smaller areas. After stirring the surface by such means judiciously, so as not to hurt too severely the roots, lawn grass should be sown over the surface, harrowing or raking in about half the quantity advised for new lawns. After sowing, the surface should be harrowed or raked over, and firmly rolled or beaten down, but if spurious grass or other weeds have possession of the lawn, then this way of renovation would not be satisfactory, and it had better be plowed under and sown afresh, in the manner already given for the formation of the lawn.

SULPHIDE OF POTASSIUM FOR ROSE MILDEW.

Sulphide of potassium solution at the strength of about one ounce sulphide to a gallon of water freshly dissolved in hot water is an excellent remedy for clearing dormant and growing roses of mildew, but it does not long hold the disease in check. The best remedy we have ever found both under glass and outside is flowers of sulphur blown or dusted over the foliage when wet with dew or rain. The sulphur is volatilized by sun heat, giving forth gas that is quite destructive to mildew and not harmful to plants. Sulphide of potassium solution is most useful for spraying dormant roses when they are brought in from the field to be potted or benched in the greenhouse. It kills any spores that may be present and thus prevents the disease from starting.—Rural New Yorker.

Remove the rickety fences; tear down the dilapidated buildings and sheds; send the tin cans, broken boxes, and cinder piles the way of all useless things; clear the yards; in the place of the aforetime rubbish grow things. Have neat lawns, whether the premises be large or small; clean roads; clean streets; clean alleys; the abatement of nuisances; the elevation of farm as well as city life; the cultivation of interest in the moral, intellectual, and physical welfare of the community; and the creation of enthusiasm and love for the beautiful and the good.

Grain hay is now bringing $10.00 per ton loose delivered at Hanford, Kings county.

Kings county reports thirty per cent of a normal year as to its prune output.

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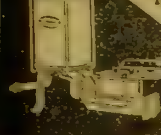

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Owens Valley Land

See Announcement on Page 115

Small Fruits and Vegetables

THIS MONTH.

THIS may not be a typical gardening month; at the same time many things now require attention. Vines and refuse of the earlier plantings should be removed and burned, or if composted, distributed in other places than the garden, for the reason that fungous troubles of the earlier crops are sometimes transported by this means.

The regular fall crop of potatoes should be put in at once. This is the stand-by crop of the year and only irrigated sections will grow it. The planting should be preceded by most thorough irrigation, for the hot weather still to come calls for abundance of water deep in the ground. If land is irrigated by the furrow system, a long run should be secured. If it is checked, be sure that the dams do not break and that sufficient water is held in the check to soak very deep. As soon as the ground is in condition to work, deep plowing should follow. It may then be harrowed down and marked off for the dropping of seed. Some gardeners precede the planting by a second irrigation, but if the first is thorough enough and the subsequent preparation of the soil has been carefully done, the second irrigation should not be necessary. Be sure that the seed is ripe, as unripeness of seed is a frequent factor in failure of the fall crop. It is wise to soak the seed for an hour and a half in solution of bichloride of mercury 2 ounces to 15 gallons of water, or in solution of formalin 1 ounce to 2 gallons of water.

Now is the time to prepare seedbed for winter crop of tomatoes. Fall and winter peas may now be planted. Yorkshire Hero is probably as good a variety to plant as any for this season. Market gardeners are now planting this variety heavily. Cabbage, cauliflower, celery, and onions may also be sown for the main crop of the year. Of course radishes and lettuce are always in order, but care must be exercised in planting and irrigating them.

WHERE POPCORN IS A MAIN CROP.

"The popcorn center of the world" is the title claimed by the little town of Odebolt, Iowa. There are 1,600 Odeboltians and every one of them is convinced of the wisdom of keeping track of the world's popcorn appetite.

That 15,000,000 pounds of popcorn is raised within fifteen miles of the town is the result of a small beginning made years ago by A. H. W. Reuber, when he rented twenty-five acres of land and set it out in popcorn. He repeated this two or three times before he was convinced of the possibilities before him.

Then he got more land, and still more; and all of it he put into popcorn. His neighbors followed suit and when that happened he bought their crops until, acording to the Saturday Evening Post, he became the popcorn king. He raises 120 acres of his pet product and buys most of what his neighbors raise.

In Odebolt there are enough popcorn cribs to take care of 7,000,000 pounds of the grain. One of these cribs alone holds about 1,000,000 pounds. In 1909 there were more than 150 carloads of popcorn shipped from the town—Coleman's Rural.

VIABLE SEEDS.

A viable seed is one having life enough to germinate. Seeds that are to be planted for the production of some valuable crop must not only barely germinate, but they must germinate strongly and vigorously. The sprout from a weak seed may be easily killed by any unfavorable condition such as cold, excess of moisture, drouth, insects or poorly prepared seed bed. A strong and vigorous seed on the other hand may possess such strong vitality that none of these harmful conditions will destroy it. The farmer cannot afford to plant seeds of weak vitality. The vitality of seeds is determined by testing either in the soil, or when that is not possible, in a germinating apparatus. Any kind of apparatus which will make it possible to keep the seeds moist (not soaking wet) and warm, will be suitable for testing seeds.

For determining vitality, one hundred seeds are placed in the apparatus and allowed to sprout. The number germinating will represent the per cent of germination. The following table is adapted from the Year Book of Agriculture for 1895. This table gives the number of seeds in a hundred of the various farm crops that should germinte.

Crop.	Percentage.
Beans	95
Buckwheat	92
Carrot	85
Corn	93
Clover, red	90
Clover, white	85
Clover, Alsike	85
Kentucky bluegrass	50
Millet	85
Orchard grass	80
Peas	98
Pumpkin	92
Squash	92
Sunflower	90
Sorghum	90
Timothy	90
Tobacco	88
Turnip	95
Wheat	95

It must always be remembered that under ordinary farm practice, where the seeds are planted in the soil, a much smaller per cent will germinate than in the germinator.

HOW TO GROW WATER-CRESS.

Those fond of water-cress may have a summer's supply by sinking an old tub or bottom of a hogshead to a depth of ten inches near a pump or well or where the water can be frequently renewed from hose. Half fill receptacle with good soil, plant rooted water-cress and fill with water. A border of umbrella plants or other aquatic plants will make it a thing of beauty as well as of utility. A further improvement may be made by planting iris around outside of the tub, the overflow of water giving the necessary moisture to the flowers.—Woman's Home Companion.

Sweet corn is sensitive to climatic changes. The principle of acclimatizing field-corn has become very well known, and in general the same applies to sweet corn. It requires some years of successive crops for a given variety to become well adapted to a particular locality; so it is not best to send too far away for seed. Follow the same general method you apply in the selection of your field-corn or buy from a grower in your own state.

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California Cultivator

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Control of the Colorado.

The interview of Col. Holabird and Allan Kelly with President Taft at Beverly on the question of the control of the Colorado, develops one feature in its handling stunning to the property owners of the Imperial Valley and to a certain extent to the whole West. President Taft entered into the study of maps and notes with desire to get a perfect understanding of the situation, and he secured a great fund of information as to the possibilities of the rich valley and methods of control of the river, but on the question of bearing the expense of this control, the President suggested that the government be reimbursed in part for "its expenditure on the Colorado by the various interests to be protected or benefited, and that a board of arbitrators should be created to determine the proportion of cost to be assessed against the government, the settlers of Imperial Valley, the Mexican government, the C. D. Co., the Reclamation Service project, the corporations doing business in the valley, the railroad and others."

This was a new view of the case, and as Mr. Kelly writes, "took us by surprise." The people had believed that when Congress appropriated the money for protective work, the government assumed responsibility for control of the river as a public duty. No part of the cost of control of the Mississippi and of making it navigable is assessed upon the direct beneficiaries. The same is true of a thousand and one other sections all over the country. Why the government should be reimbursed for the control of the Colorado is unexplainable excepting from the standpoint which President Taft advanced that this expenditure must be made in foreign territory, that is, the work of control must be done in Mexico, and there is no precedent for such expenditure of government funds.

Of course it goes without saying that there should be arbitration between this country and Mexico, and Mexico should unite with us in protecting its own property, but for the government to levy part of this expense on the people of the Colorado Desert in face of all the hardships they have taken upon themselves is, we feel, adding further to those hardships. However, Mr. Kelly closes his account with:

"The President received us cordially and simply, and plunged into business directly. He is a robust, forceful man, tanned to a healthy brown by exposure to the sun on the golf links, and he seems quite able to bear without fretting the burdens of his office. The smile was there and sometimes it was a hearty laugh, but the lips could set in grim lines and the twinkling eyes were not always smiling. It will not be easy to move him from any position he has taken, but he has the judicial habit and he will listen to and weigh arguments."

* * * *

Touching upon the suggestion by President Taft that the cost of controlling the Colorado be assessed to irrigators and others who use its waters, an article in the World's Work for August on "The Crime of the Pork Barrel" gives figures showing that the attitude of Congress is in striking contrast to that of the President. This article touches upon the system by which the taxes paid by the people are used to aid congressmen in securing the good will of their constituents by "improvements" of rivers. One instance is given in which the cost to the government of "improving" a river was $183 for every ton of freight transported over the "improved" river." Yet a little improvement in the Colorado river which would save millions and enrich both state and nation must be assessed against the people directly benefited.

Citrus Growers Convention.

The Cultivator has information from State Commissioner Jeffrey that arrangements will be made as rapidly as possible for a state convention of citrus fruit growers to be held under the auspices of the commission at Pomona, September 13 and 14. This meeting is called at this time and in this central citrus growing section for the purpose of discussing physical condition of citrus groves and prolonging of their life. In fact, from the circular we take it it is very much the same question as was discussed in a former Cultivator as to how to prolong the profitable bearing period of citrus trees. Mr. Jeffrey writes:

"In many of our citrus groves deterioration has been expressing itself in barrenness, in lack of health and vigor and in poor quality of fruit. The problems involved in these effects are of great obscurity; they are found in every locality in the state; if they are not met with wisdom and understanding the citrus fruit business cannot remain prosperous or our land values be maintained. It will be the business of the coming conference to get together the sum of the views and experiences of trained observers, scientific investigators and practical growers, and to unite in business-like council the factors able to solve these obscure problems or at least able to provide some plan for their solution. To do this the order of business and the discussion will be directed toward results, and the elimination attempted of all matters that may be narrow or valueless in their application or whose consideration would lead to no definite results."

As soon as the program and other arrangements are made, more definite announcement will be given in the Cultivator, but sure it is helpful papers will be offered at the convention by men of science and men of practice, and the people of Pomona will extend a cordial welcome to all attending.

An Apple Show.

The apple growers of the Pajaro Valley are already active in preparation for the "Apple Show where apples grow" which is to be held in Watsonville early in October. In a recent circular from the advertising department of this exposition the claim is made that apples and berries are not the only productions of the rich Pajaro Valley. Amongst other statements we note:

"Watsonville and the valley are the greatest places for babies, especially twins, in California. There are twelve pairs attending the local High School, and nine pairs attending the grammar and primary grades, while 42 other pairs are growing up. Besides there are "singles" galore. It is planned to have a "baby carriage" division in the big parade, in which 400 mothers and their pink and plump darlings will appear.

"Freight rates on all exhibits will be the same as to the State Fair at Sacramento, free if returned to original point."

The paragraph on freight rates is reassuring and parents wishing to take their twins and others for competition in the big parade should apply early for transportation, and, no doubt, the Southern Pacific will return the youngsters to the "original point."

Farms For Sale.

We have received an attractively printed and illustrated booklet issued by the New York Central Railway, entitled "Farms for Sale or Rent." It is practically an advertisement, though not along real estate dealers' lines. The railroad people claim that their point is to show that the value of these lands is not fully appreciated and that the state is still capable of raising good crops. Some of these lands which have been abandoned may be had at a very low price; oth ers are well stocked and listed higher. There are over 300 farms listed, aggregating 6346 acres, and the average price is less than $20 per acre. The booklet admits that many of the farms show discouraging conditions, but the railway people hope to make such a showing that in a few years the situation will be greatly improved. They claim that these lands near the great markets of the country should be built up so as to be as profitable as are the western farm lands.

Along the same line is another booklet describing farm lands in Maine, making an especial point of the advantages of fruit growing there.

Western farms will need improved methods to keep in line with these efforts along the Atlantic.

Misbranding Foods.

The Department of Agriculture is sending out a vast number of circulars touching upon the misbranding and adulterating of foods. These cover all kinds of food consumed by humans, and occasionally stock foods as well. In one of these circulars is a rebuke for raisin packers, and incidentally for all who put up food for human consumption. It is headed "Misbranding of Raisins," gives the name of the company putting them up, and refers to the statement on the packserts that the label on these packages, "Choice age as "false, misleading and deceptive." It as-California Raisins" is "false, misleading and deceptive, inasmuch as the said raisins were not choice California raisins, but the same were in fact composed in part of a filthy and decomposed vegetable substance."

It is unfortunate that such goods are ever sent out from the vineyards of California, and we are glad the department is confiscating and destroying such stuff.

Agricultural News Notes of the Pacific Coast

Northern California

Petaluma Incubator Company reports a single order for 2,000 incubators.

An effort is being made to organize the fruit growers of Gridley, Butte county.

Apiarists of Eldorado county report almost a total failure of the honey crop this year.

Eight full trains of fruits have been handled over the Western Pacific to Eastern points.

Sebastopol, Sonoma county, has shipped its twentieth carload of berries for the season.

Orland, Glenn county, reports the biggest promise for output of almonds in many years.

A special fruit train has been put on by the Southern Pacific between Roseville and Marysville.

Boys at Chico are reducing the grasshopper supply by using them for bait on their fishing trips.

The Hayward Review reports that tons of apricots rotted in that section because of lack of helpers.

It is being urged that Sacramento and Yolo counties unite in a persistent fight against pear blight.

Most apricot growers of Yolo county have disposed of their output and are now working on peaches.

Fifty thousand dollars worth of grain went up in smoke in Colusa county as result of a field fire.

"Standardized" fruit is being forwarded every day from various shipping points in Eldorado county.

One company at Wheatland, Yuba county, has 500 acres of hops. The crop will not be heavy this year.

Owing to lack of moisture in almond orchards of Yolo county, it is feared many "stick-tights" will result.

Healdsburg, Sonoma county, is shipping extensively of fresh fruits, four cars of apples being one day's record.

Solano-Yolo Land and Water Company will extend irrigation ditches so as to place extensive tracts under the system.

Directors of the levee district at Nicolaus, Sutter county, propose to raise the levee five feet for a distance of five miles.

Sonoma county Gravensteins are now selling at $55 per ton. It is estimated that the yield of the season will be about 125,000 boxes.

There is rejoicing at Weaverville, Trinity county, because of the forest service authorizing the sale of a billion feet of timber from the national forest.

One company at Wheatland, Yuba county, will use four hop picking machines this fall. The picking will begin on August 5th and over 1000 people will be employed.

The Lassen County District Fair will not be held this year. The reason is given that saloon men would not make their usual contribution because the town trustees refused to grant permit for customary games during fair week.

Central California

Delano, Kern county, reports wheat crop practically all in.

The Hanford Creamery complains because of smallness of peaches.

Melon shipments from Turlock, Stanislaus county, were 108 cars up to July 19th.

A warehouse containing 200 tons of straw was recently destroyed at Monterey by fire.

The plans for the apple annual at Watsonville indicate that a great exposition will be held.

Monterey apricot growers are holding out for better prices than have yet been offered this season.

A large buyer of raisins in Fresno county has predicted that prices will range between three and four cents.

A joint meeting of the Farmers Unions of Easton and Oleander, Fresno county, will be held on August 12th.

An effort is being made to have established a special milk and cream train from the Valley to San Francisco.

Gilroy, Santa Clara county, shipped during the last year more than 1100 full carloads of hay and other home products.

Porterville, Tulare county, is not exclusively a citrus town as is shown by the shipment on one day of six cars of green peaches.

Many trees, especially shade trees, at Hanford, Kings county, are losing their leaves because of the work of pest known as lace bug.

The sewer farm of Visalia, Tulare county, reports products of the farm during the last year: hay valued at $850, corn $800, hogs $1062.

An irrigation expert from the Island of Java on a tour around the world investigating irrigation systems, was in Fresno recently.

Wine manufacturers of the Valley generally unite in the claim that wine grapes will range very low this year, probably between $5.00 and $7.50.

Fruit canners report trouble with the French authorities over the claim that boracic acid is used as a preservative. The canners assert that it is not.

The supervisors of Santa Clara county have granted an appropriation to improve and increase the display of Santa Clara fruits in the Ferry Building.

The amount of citrus seed-bed stock for nursery purposes in Tulare county, as reported by Commissioner Schulz, aggregated practically a million trees.

Raisin men are still looking for a Moses to lead them from the present wilderness, and predict that unless conditions are changed another disastrous year will face the industry.

One raisin packer has estimated that if the crop does not exceed 45,000 tons, the growers will realize in the neighborhood of $4,500,000, but if the crop reaches 60,000 to 70,000 tons, the returns to the grower may not exceed $2,800,000.

Southern California

Orange county apricot growers are selling pits at $22 per ton.

There are approximately 1500 cars of Valencias as yet to go forward.

Three fully equipped creameries are operating in El Centro, Imperial county.

One hay baler at Escondido made three moves during the day and baled 69½ tons.

Banning, San Bernardino county, had light showers on several days last week.

One cattle ranch in Antelope Valley has sold this year something over 700 steers.

The estimate of Southern California for the coming walnut output is about 6,000 tons.

The Oxnard sugar factory started work on July 17th, and has promise of a long campaign.

The Yucaipa Water Company No. 1 has filed articles of incorporation in San Bernardino county.

There are about 1300 acres of potatoes on new land in the big Baldwin Ranch west of Covina.

Orange county dried apricot holders have closed a deal for two cars of apricots at ten cents a pound.

Articles of incorporation have been filed in San Bernardino county for a Products Company which is to produce oils from fruits.

Apricot growers at Moorpark and Fairview, Ventura county, have ageed to hold fruit until at least ten cents per pound is secured.

The report of one co-operative orange growers association at Riverside shows $2.30 per hundred for all navels delivered during May.

There are 17,000 acres of beans on the big San Joaquin Ranch in Orange county, which at this time promise an exceptionally fine crop.

Elsinore, Riverside county, will produce less than one-third of a normal honey crop. Buyers are in the field offering six cents for extracted.

Escondido, San Diego county, was visited by a genuine "back East" thunder shower, one freak of which was the killing of two valuable cows.

The Mill Creek Pipe Line and Reservoir Company is a new corporation formed to take over the rights of the Mission District, San Bernardino county.

Reports from Detroit give great credit to the exhibit of the Orange Belt show made by the Elks from oranges and other fruits picked in Southern California.

Residents of the Palo Verde Valley in southeastern Riverside and northeastern Imperial counties, are concerned over what is charged to be a land grabbing scheme in a swamp land project.

The Escondido Citrus Union has been organized and will build a packing house at once. There are 150 acres of citrus fruits represented by the membership. The board of directors for the first year is made up of J. A. Whetstone; W. W. Johnson; R. C. Sandel; M. G. Culp; and Arthur Jones.

The Coast

Granger, Washington, is asking for a cannery.

Many cattle died as result of brush fires near Colville, Washington.

Seattle, Washington, reports more export flour business than for three years.

Heavy winds have caused the lodging of much grain near Pullman, Washington.

Wool sales in the Inland Empire of eastern Washington, ranged near the twenty-cent mark.

A Walla Walla farmer has several acres of wheat which is running 68 pounds to the bushel.

Portland Live Stock Association offers one $10,000 purse in its trotting class for the fall agricultural fair.

An institute under the direction of the Agricultural College of Oregon was held last Saturday at Gardiner.

The apple growing sections of Oregon report this year's crop to be fifty per cent higher than any preceding.

Special fruit trains under five-day schedule have been granted to fruit shippers at North Yakima, Washington.

Peaches at Milton, Oregon, have been packing exceptionally fine quality, running as high as 50 to the box.

Pacific Coast Nurserymen's Association held its eighth annual meeting at Walla Walla, Washington, last week.

Americans who emigrated to Canada are now returning in large numbers and taking farms in Washington and Oregon.

The farmers unions near Gifford, Idaho, will build warehouses and appoint agents to handle products at coast points.

A passing engine dropped a spark in an eighty-acre wheat field at La Grande, Oregon, and the crop went up in smoke.

The acting governor of the Hawaiian Islands has signed a proclamation creating a forest reserve on the island of Hawaii.

Experiments with codling moth control at Pullman, Washington, have proven the possibility of saving 90 per cent of the entire crop.

In addition to the long continued drouth an electric storm and drying wind have visited the farming sections near Ritzville, Washington.

A wheat grower at Walla Walla, Washington, has produced wheat, the grains of which are a third of an inch long and an eighth of an inch thick.

Twelve surveying parties will be put into the field on government lands in western Montana, and as soon as possible the land will be opened to entry.

The Cudahy Packing Company has purchased 32,000 acres of land in Lower California, just across the line from Imperial Valley, for $1,200,000. It is reported that extensive improvements will be made.

Coulson's

EGG FOOD

If you were going to erect a large building, you would consult an architect—if you wanted some legal papers drawn up, you would go to a lawyer—because these men have made a special study of their respective professions.

The same principle applies to the feeding of your chickens. Presumably you have not the machinery or formula for making an egg food so that it will be just what your hens need.

That's why you should buy COULSON'S EGG FOOD. It is the result of years of study—it is scientifically mixed by experts with the right proportions of the various ingredients to give a balanced ration.

COULSON'S EGG FOOD means a healthy stock, with great laying power and eggs of quality. Saves you the time of mixing—provides a better feed—makes more eggs—means more profit, as COULSON'S EGG FOOD more than pays for itself, through making hens lay to their full capacity.

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Hens eat only what they like, but there are many foods they must have, and which must be mixed with their regular food so that they get the desired quantity. The only way the food can be mixed is by improved machinery—that's why you should feed COULSON'S EGG FOOD.

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Lee's Egg Maker fed regularly during the moulting season will do more to keep your hens vigorous than anything else you can use. Your hens will lay while moulting, get new feathers rapidly and the fertility of the eggs will allow you to hatch the chicks early in the fall.

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The Mandy Lee incubators and brooders are built on correct scientific principles, and both the egg and the chick get exactly the right conditions to produce very strong birds. Our machines are easy to handle, the directions for running are very complete, and they are not apt to get out of order. Write for catalog and any other information you want.

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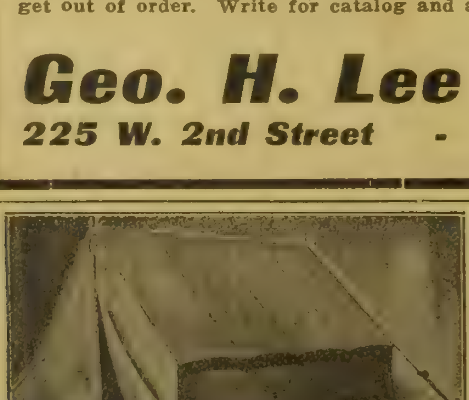

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Profit in the Poultry Yard

We solicit short articles of a practical nature from the fancier and utility breeder, giving their experience with poultry. All inquiries pertaining to feed, management, disease and its prevention will be answered through these columns.

SANTA CLARA COUNTY ALIVE.

SANTA CLARA county through the efforts of the Santa Clara Valley Poultry Association and the San Jose Chamber of Commerce is becoming better known each year as a desirable section for poultry raisers. People are learning that even if they do not desire to engage extensively in the poultry business they can, with comparative ease, raise about one hundred chicks each year giving them spring chickens and fresh eggs at all times.

City folks as well as those living in the rural districts are interesting themselves so much that eastern poultry journals are devoting very much space to stories by professional writers on poultry raising. Many of the reports are misleading in the advice offered. Practical advice is what is needed most and with this in view it is my desire to secure statements from a number of our practical poultry raisers in Santa Clara county.

Among the first to respond to the call for information from practical breeders is the following statement from Mr. H. F. Mann of Moore & Mann which firm has been successful in raising both fancy and utility stock of Barred Plymouth Rocks.

The Santa Clara Valley Poultry Association meets the first Thursday of each month in the Chamber of Commerce rooms and the public is invited to attend and ask questions which will be answered by practical people.—Joseph T. Brooks, San Jose.

Mr. Brooks incloses Mr. Mann's observations which follow.

* * *

Feeding.

For a feeding mash we use a dry mash—everything dry. We use no wet mash whatever. For the dry mash we use 10 pounds of bran, 10 pounds alfalfa, 5 pounds corn meal, 5 pounds ground barley, 5 pounds gluten meal, 5 pounds ground or finely cracked wheat, 5 pounds bone meal and 7 pounds meat scraps. Sometimes instead of corn meal we use Egyptian corn. In addition to this we find it well to feed whole grain once a day, at night. Whole wheat, Egyptian corn or Indian corn alternating, never feed whole grains mixed for the reason that the chicks pick up what they like best and leave the rest. "If you give a child sweet cake, he doesn't want meat and potatoes." Always keep plenty of grit, oyster shells and clean water and in the summer plenty of shade.

In feeding Leghorns there is practically no danger in feeding whole grain twice a day. Our experience has been that there is no danger of getting a Leghorn too fat to lay. A thin hen never lays eggs.

In this climate we can hatch twelve months in the year.

In feeding the larger hens be careful not to feed too much starchy foods. We find that with Plymouth Rocks after they are one and a half years old that there is danger in feeding too starchy foods for they become broody in the summer. It is often the extremely fat hens that set.

The Day Old Chick.

On being taken from an incubator or from the hen our experience has been that the chick should not be fed anything at all for the first 48 hours of his life at least, and for three days is better, for the reason that it has been demonstrated to the satisfaction of poultry men that nature has provided all feed necessary for the first three days, even without water or grit. When three days old, we begin feeding them with a mixture of finely cracked wheat, finely cracked corn and a little finely cracked Egyptian corn, also meat scraps, in the ratio of 1 to 10. It is best to sift the meat scraps so that the little chicks get only the finer particles. Small seeds are not as good for the little chick as the cracked grains. In addition to this we sprinkle rolled oats on the sand for the first feed as it seems to us that the oats put more vitality in the chicks than anything else we can get. Also always keep plenty of grit and clean water for them, with a temperature of from 95 to 100 degrees. For the first few days we find a temperature of 100 degrees very good as in that temperature there is no disposition to huddle. When the temperature is lower, they are inclined to huddle together and the pressing of their bodies together and breathing each others breath is injurious to them.

When the chick is four or five days old we give some kind of green feed. Young tender barley or oats, finely chopped, alfalfa, Swiss chard, and lettuce especially, are very good. Burr clover and white lawn clover finely cut up, are particularly fine. Then when four or five days old we begin feeding cows' milk. We use the common drinking fountain, which must be cleansed thoroughly every morning. About this time we let them out into the exercising room during the middle of the day. On warm days if it is convenient it is well to let them out on to the ground, being careful, however, not to let them out until late in the morning and take them in early in the afternoon and never let them stay out in the wind as a sudden chill will produce diarrhoea.

We use coffee hulls in the brooder as bedding for the first few days although I would recommend fine sand, as there is a tendency to pick at their bedding before you begin feeding them. The rolled oats sprinkled on the floor are very good.

Causes of Diarrhoea.

First of all in removing chicks from the incubator to the brooder great care must be taken in avoiding chills. A sudden chill will produce diarrhoea in almost every case and extreme heat will produce the same result. The writer had such an experience with a brood of chicks hatched and carred for by a hen. A photographer came out to the place and was very anxious to get a picture of the hen and chickens. It was a cool windy day but the sun was shining so we anticipated no trouble. It took some time to get the hen and chicks posed

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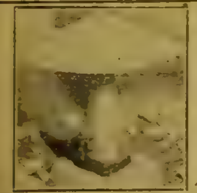

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on the box covered with straw and when we put the hen back she seemed restless. Those chicks never amounted to anything. They got diarrhoea and didn't grow. At first we could not imagine why, but other experiences have led us to believe that it was this sudden chill from remaining out too long which caused the diarrhoea and virtually killed the chicks, for a slow growing chick is poor property for anybody. Hence the necessity of covering the chicks up well in carrying them from the incubator. The temperature should be kept at about 100 degrees but never allowed to go above that, as a higher temperature is just as likely to produce diarrhoea as a low temperature. Keep the temperature at 100 degrees for the first three days. At four or five days old, lower the temperature to 95 degrees, and at two weeks old 90 degrees and so on, gradually decreasing the temperature as the chicks grow older.

Our experience has been that it is well to feed a wet mash. We feed everything dry. If you feed a wet mash from day to day there is always something left and this begins to ferment and is not good for the chick. Hard boiled eggs, finely chopped mixed with crackers or bread is good, also I have had good success with feeding milk curd mixed with bread or crackers. I do not approve of feeding meat alone as the chick is liable to get more than he needs but prefer to mix it with cracked grains. —H. F. Mann, San Jose.

POULTRY QUERIES.

Pullets.

When should Barred Rocks hatched the middle of March begin to lay? What should I feed them? Should the pullets be in a separate pen from the cockerels, and would you advise stuffing the pullets in order to have larger hens?—Miss R. M. A., Pomona.

The pullets will lay earlier if not separated from the cockerels, but it is a question whether these very premature eggs pay or not. If forced too soon the pullets may undergo a fall moult which will put them out of commission as layers during the winter months, so it seems to me a better policy to separate the sexes and confine the cockerels, giving the pullets as much range as the premises permit. Keep before them at all times a hopper of dry mash composed of alfalfa meal, two parts, wheat bran two parts, shorts one part, yellow corn meal one part, with shell, charcoal and beef scraps or granulated milk in separate hoppers always where they can help themselves. Green food they must have in plenty at least once a day, and a good full handful of wheat for each crop every night, and a mixed grain ration in six inches of straw each morning. Said mixture may be one part yellow corn, two parts wheat one part broken rice and one part oats. Two parts oats would be better, but oats are, unfortunately, very high in price, although one of the best grains for growing stock of all kinds that can be obtained.

I don't advise actually stuffing pullets, lest the liver give out and loss result rather than the hoped for gain, but they must be kept growing constantly and nothing helps more than a free range with plenty of shady places to scratch and lounge around it. Do not forget fresh, pure water every few hours during these trying days. When one is thirsty one's self, it is a good plan to see about a fresh drink for the chickens, and some have a faucet so arranged that it drips continually, thus giving the birds fresh water at all hours. Where one cannot spare time to look after them several times a day, this method of watering is to be commended. Too early laying drains the vitality and the bird will seldom grow to full size if she lays before attaining it. Buckeye Belle was the mother of ten chicks when six months and a few days old, was exhibited at the Ohio State Fair with her family, but Buckeye Belle was never the large hen she would have been had she curbed her impatience for fame and left the job of raising families to her staid old mother a few months longer, and every chick died young. So what's the use?—Mrs. Frank Metcalf.

Limberneck.

What is the trouble with chickens which have lost power to raise their necks and heads? Necks appear to be limber and useless. Is there any remedy?—F. S., Pomona.

This trouble is limberneck. Our subscriber is referred to an article on its treatment in Cultivator of July 29, 1909.

IMPROVING FLAVOR OF EGGS.

The New York Experiment Station studied the effect of different rations upon the flavor of eggs. Those laid by hens fed with a highly nitrogenous ration were inferior to those from hens fed with a carbonaceous ration. They had a disagreeable flavor and odor. The eggs and yolk were smaller and the keeping qualities inferior. In the test at the Massachusetts (Hatch) Experiment Station to compare cabbage and rowen as the green portion of a ration for laying hens it was found that the eggs produced on the former ration, although heavier and possessing a higher percentage of dry matter, protein and fat, were inferior in flavor and cooking qualities to eggs produced on the ration containing clover.

A small quantity of chopped wild onion tops and bulbs was added to the feed of a number of hens. After about two weeks the onion flavor was noticed in the eggs laid. When the amount of onion feed was increased the flavor was so pronounced that the eggs could not be used. A week after the feeding of onions was discontinued the flavor could no longer be noticed. —Coleman's Rural.

No success can be obtained with poultry unless the fowls are kept comfortable. A fowl drenched with rain is not comfortable. A man caught in a rain storm can change his clothing and thus save catching a cold, but a fowl must allow her clothing to dry on her. No fowl can stand a constant exposure to inclement weather, and the more we protect them the better will be the results.

How Much Is Water Worth?

Water is very expensive if you are buying a disinfectant that is half water.

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is a powerful disinfectant and germicide made from coal tar. You add the water yourself to make the disinfectant desired strength. COULSON'S CRESOLENE must be diluted from 20 to 100 times its own bulk. It is not poisonous—more powerful than copperas, chloride of lime and other well-known disinfectants. It forms a milky emulsion that only costs 1 1-4 cents a gallon. It is the cheapest disinfectant on the market and at the same time the best. Use it on stock—poultry—dogs or as a general disinfectant and insecticide.

If your dealer does not keep it, order direct from us. Quart cans—50c. Gallon cans—$1.25. Freight free on gallon orders.

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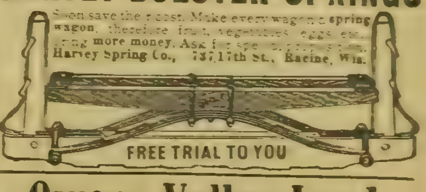
HARVEY BOLSTER SPRINGS



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See Announcement on Page 115

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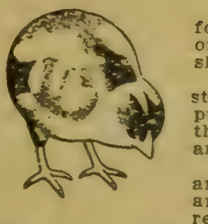

We have 2000 White Leghorn hens and pullets contracted for. Most of them are 10 months old; as long as they last we offer them at $10 per dozen in dozen lots and we pack and ship them anywhere. Cocks are $2 each.

These hens and pullets are all young and are standard stock, all are pure white and healthy. If you need hens or pullets of the White Leghorn, right now is the time to get them. By September they will be selling at $1 each or more and will be practically impossible to obtain.

We are selling three-months-old Buff Orpington pullets and Rhode Island Red pullets at $9 per dozen. Write us for any kind of grown poultry. FREE 32-page book mailed on request. We are still selling 10,000 chicks per week.

Pioneer Hatchery Co., 112 E. 8th, Los Angeles

Bees and Their Care

BLACK BROOD IN THE SAN JOAQUIN VALLEY.

By J. G. Gilstrap, Inspector of Apiaries, Stanislaus County.

STANISLAUS county has thus far entirely escaped any appearance of the Black or European Foul Brood, but realizing the need of a knowledge of this most destructive disease of the apiaries, I recently made a trip to Tulare county and gave a few days to study in the apiaries infested. I wish to emphasize this, that the disease is varied in its progress and its working is not fully understood.

First Stage.

Usually the first symptoms are maifested by a yellowish spot on the larva when it is one-half to two-thirds grown and before the brood is sealed. It is, however, sometimes found when the larva is only two or three days old. Again, I have opened suspicious looking cells and found brood affected in the same way. At times it is not even visible until on removal from the cell the yellowish spot is uncovered. But almost universally there is a rather dry, waxy appearance to the unsealed brood and a lack of the moist and slightly corrugated appearance noticeable in healthy brood. As soon as diseased the brood is deserted by the bees who refuse to care for it.

Second Stage.

Within 48 hours after the first attack the brood will usually stretch out straight in the cell, though some still lies curled up. At this stage the change is very marked to a yellowish tinge. Decay is very rapid and the larva flattens out and takes on a darker hue. It soon takes on the appearance of the American Foul Brood, but is not so stringy or ropy.

Third and Last Stage.

The third or last stage shows drying up from the outer end which rapidly turns darker. As it dries it peels loose from the botom of cell. The variation in appearance which is so noticeable is accompanied by variation in odor. The odor is very disagreeable and sickening and does not have the customary "glue pot odor" of American Foul Brood.

Re-queening Helpful.

The most mysterious feature of it all is the one of contagion. It is even claimed that brood combs from a badly infested hive may be placed in the super over the queen excluder in a strong, healthy colony and the diseased combs will all be cleaned out by the bees and the healthy brood in the lower part of the hive will not be affected. This disease not infrequently disappears in a colony or even in many colonies of an apiary, only to reappear in a few weeks or months and generally in a worse form. Many apiarists assure me that requeening with bees of pure blood and high vitality, preferably of the Golden Italian, Carniolan or Cyprian strains, is the best safeguard and the nearest to a cure for this dread disease.

Every inspector of apiaries in the state should study this disease, as should every bee-man. In addition, every board of supervisors should pass quarantine laws against it. Stanislaus county has done this, and I will be glad to mail copy of its bee law to any who will send stamp. This law provides for destruction by fire of any and all bees shipped into the country from any point within 25 miles of an infested apiary, and shipper is guilty of a misdemeanor.

At the trial by which orange growers near Colton are endeavoring to secure an injunction against operation of cement plant, the cement dust gathered from leaves of orange trees was used to construct a block of cement in proof of its injurious nature.

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GROSS AND NET WEIGHT OF HONEY PACKAGES.

The question is often asked as to whether we should weigh in the package, and count it as so much honey, or should the package contain a certain amount of honey, net weight? The first year that we produced extracted honey in large quantities, we weighed in the 60-pound tin cans, putting in about 58 pounds of honey. We supposed that was the usual practice; but we received so many complaints, that the time spent in correspondence in trying to straighten out matters was worth about as much as had been gained. Since then, we have put in 60 pounds of honey. I was talking on this point last fall with an extensive producer of extracted honey, and he defended the practice of weighing in the can. He said the producer had to buy this package, and, unless he weighed it in, he received no pay for it. It was worth something to the purchaser, and he ought to pay for it. He cited lard and other goods put up in packages, as being gross weight.

I think it really makes little difference which practice is followed. In any event the producer must get his pay for the package. If he weighs it in he gets his pay for it. If he puts in a certain number of pounds, net weight, then he must charge more per pound for the contents. Which practice shall prevail depends somewhat upon circumstances. I doubt if any product is sold in large quantities, at wholesale, and the package weighed in. No dealer in honey would buy a barrel of honey, and weigh in and pay for 50 pounds of barrel. The same way with a barrel of sugar, lard, etc. But when it comes to putting up these commodities for the retail trade, I think the usual practice is to weigh in the package. Take the breakfast foods, for instance, I believe that the packages are weighed in. The packages must be paid for, and it is likely that this practice secures the object with the least friction. It is not a question of honesty or dishonesty, unless there is an attempt to lead the purchaser to believe that he is getting net weight, when it is gross. It is largely a matter of what is the usual practice; but it ought to be made as uniform as possible. If it is understood that honey by wholesale is to be net weight, and retail packages are to be weighed in, it might simplify matters somewhat.—Beekeepers' Review.

BEE QUARANTINE.

Bee Inspector A. F. Wagner of Imperial County informs us that strict enforcement of the county ordinance against the shipping in of diseased bees is prevailing at the receiving point, Imperial Junction. Every hive of bees shipped into the Valley must be stopped at the Junction and inspected. The Imperial Valley is developing into a great honey producing section, and those who are interested in the industry are demanding that their county be kept free from foul brood and other destructive pests. Therefore anyone contemplating shipping bees to Imperial county should write to Mr. Wagner at El Centro and learn as to requirements of the county ordinance.

Many homesteaders are now moving into Palo Verde Valley in Riverside county.

General Agriculture

NEW HOPE FOR THE MAN WITH THE PLOW.

THERE is good reason to hope that the gasoline engine has greater triumphs within its easy and early reach even than the automobile and the flying machine. Mechanical help is needed by the plowman more than it is needed by any other man on this planet. The muscle of man and of beast yet turns most of the furrows whence our food and clothing come. True, the grain crops are planted and worked and gathered to a very considerable extent by machinery on large farms and in the most advanced regions of our agricultural life. But cotton is yet picked by hand.

But soon the small farmer will have his gas engine that will propel his plow as well as saw his wood and pump his water and thresh his grain and cut his fodder; and the long, tedious and costly experiments to build a successful cotton-picking machine seem practically certain of a successful result. It will be worked by the same kind of power that has made the automobile and the aeroplane possible. And there is no reason why the same power should not be detached from one machine and applied to others that will plow, plant, and cultivate the cotton fields as well as gather the crops.

If you are given to using so big a word as "revolution," you may find an interesting justification of such a dangerous habit in the study of the application of the gasoline engine to the tilling of the soil. It may free more men from the plow and the hoe than have yet been freed from muscular drudgery by steam and electricity.—World's Work.

THE BLEACHED FLOUR CASE.

About a year and a half ago the Secretary of Agriculture decided that the Alsop process of bleaching flour by peroxide of nitrogen was in violation of the pure food law, the allegation being that the process produced nitrites in the bread, which are unhealthy and actually poisonous. The case came into the federal courts and was decided last week in favor of the government, the government showing that the bleaching process not only adulterated the flour, but poisoned it, and made it possible for millers to misbrand their product and sell new flour for old. There were thus two issues in the case, that of adulteration and misbranding, in both of which the jury decided in favor of the government.

The history of this case is rather interesting. The Department of Agriculture introduced what is known as durum wheat, a special boon to farmers in the semiarid section, as it can be grown with less moisture than any of the ordinary wheats. It is very strong in gluten, being as the name implies, the hardest of the hard wheats; but the gluten has a yellow tint. The millers were able to buy this wheat at about ten cents a bushel less than the ordinary hard wheats of the North. In order to pass it off as ordinary hard wheat they resorted to bleaching it with nitrogen peroxide thus taking out the objectionable color.—Agricultural Review.

RHODES GRASS.

We have the following from Mr. B. Harrison of Burringbar, N. S. W., Australia, touching upon a new grass being tried out in that country. It is Chloris virgata. Like the Johnson grass it may have other qualities than Mr. Harrison mentions and its planting till tested should be with caution:

As it may prove of great benefit to stock owners kindly permit me to give a description of the above. This grass is rapidly coming into great favor throughout Australia and the favorable reports of its great merits from many places point to its extensive cultivation. It has proved a really wonderful grass for resisting drought, and will grow and remain green when many of the other species are burnt up. The famous paspalum grass has long held a leading place, but to be a success is requires fairly rich soil, and a warm, moist climate or artificial irrigation. With Rhodes grass it is entirely different, as not only will it thrive well where the rainfall is light, and the soil inferior, but will also survive long periods of drought, and yield well where the paspalum might prove a complete failure, or only exist. In the central dairying districts of Queensland, and the western portion of New South Wales where the climate is dry, Rhodes grass is proving equally as great a boon to the settlers as paspalum has to those in our moist coastal country, and without doubt it will in the course of a very short time, when its great merits become more widely known, prove one of the most beneficial and popular grasses yet introduced into Australia, as it can so easily be cultivated over such an immense area of land. Probably no other grass will give such good and satisfactory results under adverse or trying conditions of soil and climate, as has already been well demonstrated in many localities. The seed is very light and fine, and germinates readily with a small amount of moisture, and from 7 to 8 pounds of seed should be sfficient to sow one acre of land. After germination, the plant throws out strong, vigorous runners, which root at each joint, after which the shoots grow erect to the height of three or four feet. It spreads rapidly, and presents a splendid waving mass of verdure that would delight the eye of the pastoralist. It yields, according to soil and climate, from five to ten tons of the most nutritious fodder, per acre, which in feeding value, ranks with sorghum, and it is greatly relished by all classes of stock, which prefer it to paspalum. It produces a large quantity of seed which can be harvested easily, and if necessary at any time it can be ploughed out without much trouble.

The farm is a little world to itself, in which every field is a continent, every pond an ocean, every building a city. And every farm has its north pole—that is, the highest point of achievement—yet to be discovered.

Heavy rains are not good for the manure—except when the manure is under the ground.

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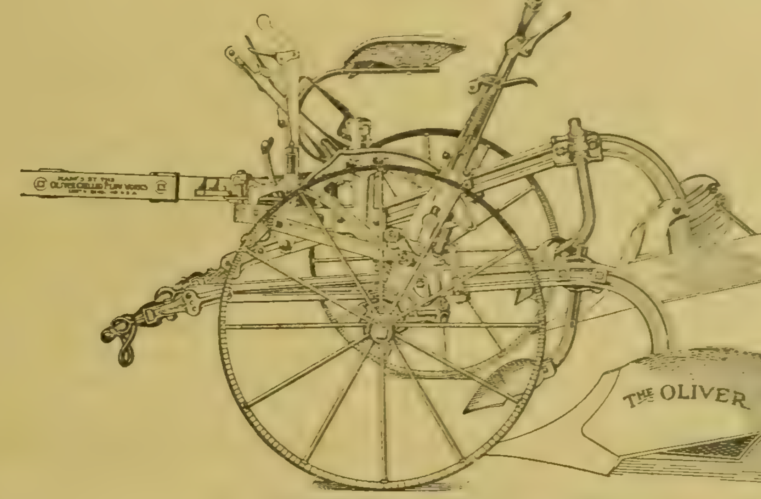
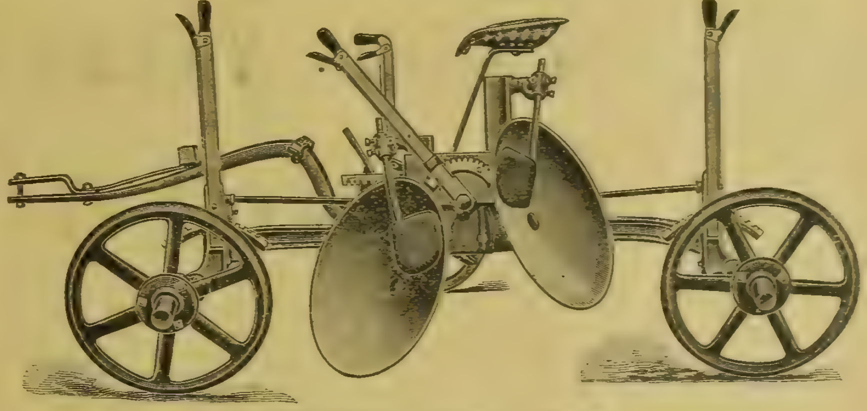


No. 23–Oliver Sulky Plow



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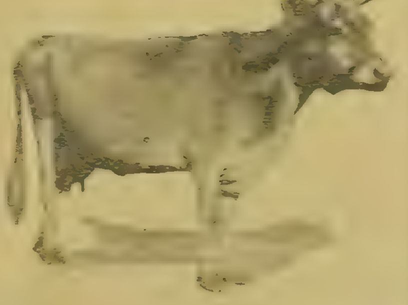

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Queries and Replies

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Dodder.

In a recent issue of the Cultivator a subscriber gave his method of killing dodder in alfalfa. He stated that he burned the infected places with dry straw, and said that of course it would kill the alfalfa as well as the dodder.

My method of killing dodder is radically different, and it is very successful.

First I mow the spot infested as close to the ground as possible. Then with a fine tooth rake I rake the alfalfa, together with as much dodder as can be removed from the stubble in this way, into the center of the spot. As soon as dry this can be burned, or if the dodder has not seeded, it can be removed anywhere at once. I now take a gasoline torch—such as is used by electricians, plumbers, etc., and burn all the dodder in sight. These spots should be examined again in from three to six weeks to see that no dodder has been missed. I treated one spot, one rod square, that was simply matted with dodder. This spot bore its full crop of alfalfa just as soon as the uninfested part of the field. Three months later I could find no dodder there. I burned once only. In no case have I been able to see that the alfalfa was injured by the use of the torch.—D. D. Powell, Morganhill.

Milk Closer.

Our cow is in best of condition, but occasionally without apparent reason one of her teats will cake and the milk be thick like custard. Sometimes one quarter is affected, some times another. The trouble lasts a few days then she seems all right.—D. G., Pomona.

The milking is at fault more than likely in this case. After the cow has been milked strip the teats thoroughly until no more milk flows. We would discharge a milker that let this occur the second time in a cow already milking. The only time when it should be overlooked is in a fresh cow. When the trouble occurs again give her a pound of epsom salts with an ounce of ground ginger. But stop its coming on, as it is needless to have it come often.—M. E. S.

Best Dairy Breed.

What do you consider the best breed for dairy purposes? How much milk should the average cow give to be profitable? Cows I now have are giving from one to two and a half gallons and this seems to me very light. They are in pasture during the day and have alfalfa hay morning and night.—H. G., Santa Ana.

I do not know which is the best breed of milk cows. Indeed I believe every one of the four great dairy breeds has cows of great value. The breed question must come down to the breeder's choice and to the feed he can obtain cheapest. In the milk herds supplying milk for city use if the cow averages 27 pounds a day of 3.4 milk it is a good one. Some few do better but most fall under this amount daily.

The milking of these cows is not heavy and unless it is extra rich, they are not at all fancy milkers. If you could wet the alfalfa hay and cover it with a sheet in the morning, by night is would be soaked and if fed to the cows should increase the milk flow considerably. In making any change like this do it slowly for it often throws cows completely off their feed to make sudden changes. I would give them this for a couple of weeks and watch results. If they are far along in milking it will hardly help them much. Fresh cows it usually pushes right up into a good flow at once.—M. E. S.

Cascara Sagrada.

Mr. A. Burkhart of Shoemaker, Los Angeles county, recently brought to the office a twig of a bush growing on the northern side of the Sierra Madres at an altitude of about 5000 feet. He told us the bush ranged from six to eight feet in height with holly-like berries ripening in July. The leaves are smaller but shaped somewhat like the oak. This twig was submitted to the Cultivator botanist who writes:

"This is one of the southern forms of Cascara Sagrada. It is botanically known as Rhamnus crocea var. ilicifolia. It is commonly used by the Mexicans as a purgative."

Date Palms.

How can I raise date palms? Have two started from seeds.—Subscriber, Calistoga.

The culture of the date palm, by which we presume our subscriber means a seedling from the commercial date, or Phoenix dactylifera, is very simple if he wishes it only for an ornamental plant, as is also the case with the Phoenix canariensis, commonly called the date palm and a close relative to it. To raise for fruit is another question and would very likely be impossible at Calistoga. The seedlings would probably be of no value in any section, for the date is unisexual, that is, the fruit bearing tree must be fertilized from the male tree. Therefore seed which have been planted may or may not produce bearing trees. If an ornamental palm is desired, the Phoenix canariensis which does not bear edible fruit, is much handsomer than the dactylifera produced from seed of commercial date.

Squash Bugs.

I send in small box bugs which are eating the life from my pumpkin vines. What are they? There are millions of them.—W. T., Atwater.

See answer to query "Squash Bugs" on Page 67 of Cultivator of July 21st.

Pruning Apricots.

Is this the proper time to prune apricot trees or should I wait until the leaves have all dropped? I understand some people prune as soon as they pick the fruit. How much of this year's growth should I prune off and how long should the laterals be left? Of course I understand the general shaping and balancing of the tree.—Subscriber, Saticoy.

The question of pruning is too extensive to go into at length in this department. Later we will consider it in the deciduous department. The apricot is somewhat different from other trees in this, that it bears its fruit on both the older and young growth. The plum, apple, pear and cherry bear fruit on wood of two or more year's growth; the peach on wood of last year's growth. The apricot combines the two. Nevertheless fresh new wood is essential for largest and best growth. To secure abundance of new wood winter pruning is wise. Some growers cut off severely at the winter pruning. If trees are pruned as soon as fruit is taken off and this is followed by irrigation, young wood is thrown out and healthy fruit buds are formed which will give larger and finer fruit than is produced from the older wood. Whether it will be wise to prune this late we are not certain, as it would depend upon locality, but if done at once it might result in good returns.

Seed Bed Stock.

I have orange seedlings planted in bed March 1910 which have reached the height of 18 inches. Will it be safe to plant them in nursery form this season?—Subscriber, Exeter.

Seed bed stock which has reached such a height since March has certainly made extraordinary growth and we doubt not has not yet had time to harden. Therefore, to plant at this season in an arid climate would be attended by many difficulties. If the nursery row could be covered with lath so as to protect from the sun's heat and abundance of water be used at the right time, it is possible they would take root and harden the wood before the cooler weather. We cannot, however, believe otherwise than that early March planting of this seed bed stock in nursery row would be preferable. If this is done a slight reduction of moisture in seed bed might prevent such strong growth and put them in better condition for the cold weather.

June Beetles.

I am sending specimen of beetles which are on our cherry trees. What is it and how may we get rid of it?—Subscriber, Beaumont.

This is the June beetle and as a rule does not do sufficient damage to make treatment of trees necessary. It is a biting insect and consequently may be poisoned by spraying trees with Paris green or other arsenic mixtures. If the trees are young and the beetle is doing considerable damage, we would do this at once, but on larger trees would not. Another good remedy would be to turn the poultry under the trees.

Squirrel Poison in Oranges.

I have been very much interested in reading in the Cultivator of ways and means to exterminate squirrels. I will give your readers a bit of my experience. While preaching at Bloomington several years ago, the squirrels formed an extensive colony in front of the parsonage barn, in a vacant lot of about five acres. Finally they began to dig under and come up in my barn after my hay and grain. One day I heard a man say that he thought squirrels liked oranges, for he saw one run across the road in front of him with an orange in its mouth. Immediately I procured a few oranges, took off the rind and cut the pulp in small pieces. Into the juice of these pieces I inserted a small dose of strychnine poison. I placed two of these pieces in each hole and never saw but one squirrel after that. One treatment killed the whole colony. About a month after, I saw one squirrel sitting on the top of one of the mounds (I think he was a stray one). I put a piece of orange in the hole into which he ran and never saw another squirrel while I remained in the place. The reason I put two pieces of orange in one hole was, because there are never but one pair of squirrels in one hole.—Rev. B. F. Hewlett, Pomona.

Chlorosis.

Please inform me what is the cause of the yellow spots on orange leaves I send. Could this be caused by fertilizer, or will fertilizer be beneficial?—C. H., Redlands.

The mottled and streaked appearance of the leaves in which the rich green has given way to yellow, has caused much discussion and investigation. Explanations are many, and all more or less unsatisfactory. Mr. Snowden has given one article in a recent Cultivator touching upon this subject in which he advocated the theory that excess of magnesia and insufficient lime may be the cause. His remedy—which he frankly says has not yet been proven out in actual practice—is the application of nitrate of soda and superphosphate, or at times a liberal application of gypsum is good. Another article will appear in next week's Cultivator from Mr. Snowden on this topic. Several have maintained that a marle hardpan underlying orchard is sure to cause chlorosis. Fertilizing with stable manure with very deep culture, has at times brought relief; at other times it has failed.

Bleaching Raisins.

Please give me information regarding bleaching of raisins. How large should the vat be made? How much lye should be used? How hot must it be kept? How long should raisins stay in the hot solution? How long will it take to sulphur?—J. P., Kerman.

The size of the vat will depend upon the magnitude of the business to be conducted. We have seen the ordinary iron kettle used, of, say, 50 gallons capacity. Grapes were placed in metal basket and a derrick used similar to the old fashioned well sweep with weight at opposite end to aid in dipping. Usually the small Sultanas or Thompson Seedless are used for this bleached stock. The lye dip should be in proportion of about one pound of lye to 12 gallons of water. This should be kept boiling hot, and the ripe fruit dipped for an instant then plunged into fresh, cold water and thoroughly rinsed. They may be left in sulphur house after placing on trays only long enough to bleach to desired color. If the weather is extremely warm, they may be cured for a very short time in open sunlight, then trays stacked and the fruit dried more slowly. This gives a beautiful amber color. If the weather is moist, they may be left spread much longer.

Swelled Head.

Can you give remedy for swelled head in turkeys?—W. S., Kerman.

This swelled head is sometimes caused by too closely confining turkeys at night so that they breathe foul air. Again, there is another trouble caused by fleas, in which the heads swell and get scabby and unsightly. For simple swellhead, a dip into a two per cent solution of permanganate of potassium holding the

(Continued on Page 119.)

WHEN "TOM SAWYER" WAS WRITTEN.

In his reminiscences of Mark Twain in Harper's for August, W. D. Howells tells of the time when Mr. Clemens wrote Tom Sawyer and brought the manuscript to him for criticism.

"I am surprised to find from the bibliographical authorities that it was so late as 1875 when he came with the manuscrip of Tom Sawyer, and asked me to read it, as a friend and critic, and not as an editor. I have an impression that this was at Mrs. Clemen's instance in his own uncertainty about printing it. She trusted me, I can say with a satisfaction few things now give me, to be her husband's true and cordial adviser, and I was so. I believe I never failed him in this part, though in so many of our enterprises and projects I was false as water through my temperamental love of backing out of any undertaking. I believe this never ceased to astonish him, and it has always astonished me; it appears to me quite out of character; though it is certain that an undertaking, when I have entered upon it, holds me rather than I it. But however this immaterial matter may be, I am glad to remember that I thoroughly liked Tom Sawyer, and said so with every possible amplification. Very likely, I also made my suggestions for its improvements; I could not have been a real critic without that; and I have no doubt they were gratefully accepted, and I hope never acted upon. I went with him to the horse-car station in Harvard Square, as my frequent wont was, and put him aboard a car with his MS. in his hand, stayed and reassured, so far as I could, concerning it. I do not know what his misgivings were; perhaps they were his wife's misgivings,. for she wished him to be known not only for the wild and boundless humor that was in him, but for the beauty and tenderness and 'natural piety'; and she would not have had him judged by a too close fidelity to the rude conditions of Tom Sawyer's life. This is the meaning that I read into the fact of his coming to me with those doubts."

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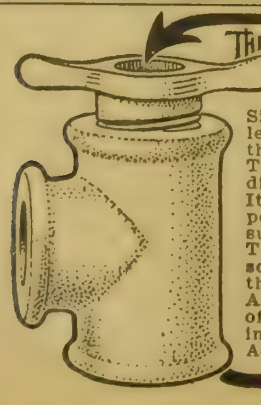

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Household Department

UNAFRAID.

Who's afraid of a cow!
They're so gentle and kind
You can go up quite close and they none of 'em mind.
An' they like little girls' so I've heard people say—
But I wish, oh I wish they was furder away!

Pooh!—who's afraid?
They're as good as can be,
An' one's a child cow that is younger than me.
An' they give us good milk—an' there's nothing to fear,—
But I wish, oh I wish that my Daddy was here!

—Burges Johnson, in Harper's Magazine for July.

HE HELPED TO FINANCE THE REVOLUTION.

AT the corner of Rue Beauverger and Rue de la Halle in Havre stands a three-tsoried house of gray stone, with a sloping slate roof and high chimneys, topped by picturesque pots of clay, discolored by time, smoke, and the elements.

In this now dilapidated structure of slate and granite were, from 1776 to 1792, the officers of Pierre Augustin Caron de Beaumarchais, who spent a fortune during our Revolutionary war in providing the Americans with guns, ammunition, and supplies of every description. Indeed, it is safe to say that without his aid the colonists could not have carried on the conflict.

Rochambeau and Lafayette lent their swords to the United States; Beaumarchais sent supplies to the value of 5,000,000 francs. It is true that these material and metallic sinews of war were not a gift, for Beaumarchais was a merchant, and sent them to the United States with the understanding that they should be paid for in time. That he was far from pressing in regard to his bill is proved by the fact that it was never paid during his life.

After the conclusion of the war Beaumarchais repeatedly claimed from the United States the 5,000,000 francs which his books and accounts showed were due to him. He received hopeful assurances and offers of a compromise in turn, until Alexander Hamilton, who had been authorized by Congress to arrange a settlement, proposed on a basis of 2,280,000 francs. It is probable that Beaumarchais would have accepted this could he have obtained it, but he died in 1799 without ever having received a penny.

Four years before his decease, chagrined by repeated disappointments and blasted hopes, exiled by the French Revolution, and living alone in a Hamburg garret, he wrote the following letter to the American people.

"Hamburg, April 10, 1795.

"Americans,—I have served you with a zeal that has been unswerving. I have received in return—nothing! I am today your creditor.

"Permit me, before dying, to leave my daughter to your care and consideration, with the request that you give her for a dower what you owe her father. Perhaps, after I can no longer defend her against the bitter injustice of the world, she will be left penniless, and perhaps the hand of Providence, foreseeing this, has wished, by repeatedly retarding the discharge of your indebtedness to me, to provide for her after I am gone."

In 1824, and again in 1835, this daughter went to American to claim the amount due.

In the latter year she was offered 800,000 francs ($154,400), and took it as her sole heritage.

It was all that remained of a large fortune spent in the cause of liberty. —John Preston Beecher, in Harper's Magazine for August.

FOOD.

Rational living on the farm or in any other community presupposes a reasonable variety of well-cooked foods of good quality with the various sorts in suitable proportion. In many homes the housekeeping is needlessly complicated and the result obtained is out of proportion to the labor expended. In other homes, particularly where the variety of easily obtainable foods is limited and the proper preparation of foods is not given due attention, the diet is too monotonous to be satisfactory or is so prepared that it is not well suited to the family needs. The question of lessening household labor by avoiding unnecessarily elaborate dishes and meals is discussed in the Cornell Agricultural College and Experiment Station publication referred to.

In our own country the difference between the present table and that of the pilgrim fathers is so great as to account to some extent for the present lack of leisure of the housewife. To fish, brown bread, pork and beans, vegetables, have been added the present salads, ices, elaborate puddings, cakes, and the many forms of dessert. In the earlier times * * there was a regular baking day, when large quantities of baked beans, pies, and bread were prepared.

The baking day and the preparation of large amounts of food at one time, with the consequent economy of labor, are much less common than was once the case. Changes in customs and standards of living and a more varied food supply have led to the selection of many dishes which are best if freshly prepared and to menus which are very often needlessly elaborate. All this means added work for the housekeeper. The careful selection of food and the planning of meals will do much to lessen household labor, and if this is done with due reference to nutritive value of foods and wholesome combinations the results will oftentimes be more satisfactory than is at present the case.

All are coming to know that simpler living is necessary, not only for the comfort of the housekeeper but for those who sit at her table. Elaborate menus are entirely impossible when one woman does all the work. * * * The elaborate meals and the unnecessary dishes are not for the good of anyone. They interfere with the beautiful grace of hospitality; they prevent the happiness of the cook and the preservation of her strength. Simple, wholesome meals, with intelligent cooking and serving, are a blessing to any household.

In homes where the diet is too monotonous and the preparation of food is not in accordance with right standards of living, the knowledge of proper methods and ways of utilizing available food supplies will result in a much more satisfactory diet with the same amount of labor, or indeed oftentimes with less expenditure of time and energy.

Commenting on the lack of variety in food noticeable on many busy farms and ways in which it may be obviated, Professor Day makes the following statement: "Most farmers have to depend on chickens for the greater part of their fresh meat, and unless one is in the poultry business the care of chickens is another burden added to the household." The increased time which labor-saving devices in the home and convenient construction of the farmhouse make possible would give the farmer's wife time for her poultry, and then poultry keeping need not be a burden. There should certainly be no lack of fresh vegetables on the farm, but frequently the farmer can not give the necessary time to the kitchen garden and the farmer's wife is unable to find time for gardening, though most women doubtless consider gardening a recreation rather than a task. "If only the men can do the first hard work in the garden they will see that the women will welcome the opportunity for work out of doors among the green things, and will be the better for it physically."

The above statements make it plain that if the diet is out of harmony with rational standards, either because it is too elaborate or because it is too monotonous or unsatisfactory in other ways, it is possible by the application of knowledge now available to improve conditions and at the same time lessen the housewife's burdens.

In few departments of home life has there been so much improvement in the last one hundred years in the economy of labor and fuel and in scientific methods as in cookery. It remains, therefore, for the housewife to take advantage of the gain in time and labor to study the kind and quantity really necessary, and the best and simplest way of preparing food, in order that she may have time at her disposal for the other duties in and out of the home and to add to her own leisure and means of self-improvement.—Exp. Sta., Bulletin 3

POUNDED MEAT.

Pounding meat before cooking is an old-fashioned method of making it tender, but while it has the advantage of breaking down the tough tissues it has the disadvantage of being likely to drive out the juices and with them the flavor. A very good way of escaping this difficulty is pounding flour into the meat; this catches and retains the juices. Below are given the recipes for two palatable dishes in which this is done:

Farmer Stew.

Pound flour into both sides of a round steak, using as much as the meat will take up. This may be done with a meat pounder or with the edge of a heavy plate. Fry in drippings, butter, or other fat in a Scotch bowl, or if more convenient in an ordinary iron kettle or a frying pan; then add water enough to cover it. Cover the dish very tightly so that the steam can not escape and allow the meat to simmer for two hours or until it is tender. One advantage of this dish is that ordinarily it is ready to serve when the meat is done as the gravy is already thickened. However, if a large amount of fat is used in the frying, the gravy may not be thick enough and must be blended with flour.

Spanish Beefsteak.

Take a pieec of round steak weighing 2 pounds and about an inch thick; pound until thin, season with salt and Cayenne pepper, cover with a layer of bacon or salt pork, cut into thin slices, roll and tie with a cord. Pour around it half a cupful of mi and half a cupful of water. Place in a covered baking dish and cook two hours, basting occasionally.

FOR POST CARDS.

Here is a hint for those who have pretty foreign post cards to dispose of: A high threefold screen of plain green burlap was purchased and a narrow strip of black oak run across each panel about two-thirds of the way up. On the space above the tinted cards were prettily arranged, fastened with stationer's glue, and looking like bits of mosaic on the dark background.

THE WISE PHYSICIAN.

"The doctor has ordered me to eat only the plainest food."

"For how long?"

"Till I have paid his bill, I guess."

"Charity is the mother of joy and brings happiness—alike to the giver and to the receiver."

The trouble with cute children is they soon outgrow it and become impudent.

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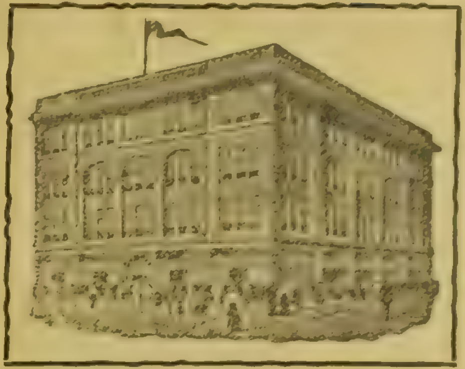

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Emma Arada, Dalton Adding Machine Co., San Francisco.
B. H. Binford, Pacific Coast Refineries Co., Oakland.
Margaret Barry, Underwood Typewriter Co., City.
Frank Bernardo, John H. N. Clausen, Kearny St., City.
Ella Bennett, Ransome-Crummey Construction Co., Oakland.
Anna Behrens, Cooper Av. Co., Oakland.
Esther Christensen, Home Telephone Co., Oakland.
Violet Clark, Oakland Chamber of Commerce.
M. Finney, First National Bank, Berkeley.
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Mable Mayon, Enquirer Office, Oakland.
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Ora Phillips, Wholesale Furniture Co., Oakland.
Alice Perry, United Wireless Telegraph Co.
Lulu Ramsey, Domestic Laundry Co., Oakland.
G. W. Schultz, Union Transfer Co., Oakland.
Anna Soderstrand, Underwood Typewriter Co., City.
George Stratton, Owl Drug Co., City.
Henry Suydam, MacMillan Publishing Co., Oakland.
Luna Trowbridge, Kalamazoo Corset Co., City.
Susie Valencia, Humphrey Radiator Co., Oakland.
Alice Van Hovenberg, Idora Park Amusement Co., Oakland.
Albert Wanner, Cycle Hatchery Co., Oakland.
G. H. Whiting, Southern Pacific Co., Alameda.
Una Williams, Attorney's Office, Petaluma.
Blance Tisdale, Underwood Typewriter Co., S. F.
Stella Stewart, Savoy Shoe Co., Oakland.
Ruth Frondsen, Underwood Typewriter Co., S. F.
Robert Adamson, Western Electric Co., Oakland.
Edna M. Hunks, Attorney's Office, Oakland.
Edwina Hillar, Attorney's Office.
Lillian Bertola, Pierce & Co., Oakland.
Hazel Hirsh, Harbor Bank, Oakland.
Chas. Galleippi, Doak Gas Engine Co., Oakland.
Arnold Dolocini, Oakland Bank of Savings.
Jeannette Fulcher, Curry Headquarters, Oakland.
Lolita Moore, Curry Headquarters, Oakland.
Gertrude Hurly, Oakland Gas L. & Heat Co.
Berenice Hogge, Attorney's Office, Oakland.
Evelyn Doder, Home Telephone Co., Oakland.
O. A. Pelleymonter, Western Electric Co., Oakland.
Geo. Skillman, Harrington-McInnis Printing Co., Oakland.

Send for Illustrated Catalogue and Mention the Cultivator.

San Francisco and Los Angeles Produce Markets

Los Angeles Markets

LOS ANGELES, Aug. 3, 1910.

Butter.

Butter advanced one point yesterday, which is in advance of San Francisco. Market is very firm.

Price to trade 2½c in advance of the following Produce Exchange quotations:

Extras	32½
Firsts	30
Cooking	23½

Cheese.

Northern fresh	16½@17
Anchor, large	18
Oregon Daisy	18½
Imported Swiss	28@30
Domestic Swiss	23@25

Eggs and Poultry.

The recovery of eggs is more than made during the week and they are now materially above last week's quotations, with firm condition prevailing.

Paying price f. o. b. L. A. is:

Local ranch candled	33
Case count buying price	29
Eastern fresh	27
Eastern storage	25

Dealers pay for live poultry f. o. b. L. A.:

Hens, per lb.	15@17
Roosters	9
Broilers	16@17
Turkeys	22@24
Geese	12
Ducks	14¼
Pigeons, doz.	75

Live Stock.

The following quotations are f. o. b. Los Angeles, on all stock:

Hogs, 175 to 200 lbs.	9½
Prime Steers	5
Heifers	4@4½
Calves, per lb.	5¼
Sheep ewes, per head, shorn	4.00@4.50
Lambs, per head	3.50
Wethers, shorn	4.00@4.50

Potatoes.

Wholesale prices are:

Highlands	1.50@1.60
New potatoes, per ctl.	1.35@1.50
Sweets, Yellow, per lb.	3@3½

Onions.

Wholesale quotations:

Silver Skin, per ctl.	2.50
Yellow Danvers	2.00
Local Reds	1.75
Garlic	7@8

Vegetables.

Wholesale quotations:

Asparagus	10@12
Artichokes, northern, doz.	90
Beets, sack	90
Beans, green and wax	3½@4
Beans, Limas	5@6
Brussels Sprouts	10
Bell Peppers	6
Green Chilis	10@12
Cabbage, per sack	1.50
Cucumbers, per box	35
Celery, crate	4.35
Cauliflower, per doz.	25@35
Carrots, per sack	90
Egg Plant, per lb.	6
Endive, doz.	40
Green Corn, box	25@35
Green Onions, per doz. bunches	20
Horseradish, per lb.	25
Lettuce, choice, per crate	1.00
Leeks, per doz.	35
Okra, lb.	6@8
Peas, per lb.	5½
Parsley, per doz. bunches	25
Parsnips, doz. bunches	15@20
Radishes, per dozen bunches	10@15
Rhubarb, strawberry, per box	1.50
Rhubarb, crimson winter	4
Spinach, per dozen	20
Summer Squash	35
Turnips, sack	90
Tomatoes, box	25@40
Water Cress, doz. bunches	25@35

Citrus Fruits.

Valencias	4.00
Grapefruit	2.50@3.00
Lemons	4.75

Fresh Fruits.

Wholesale prices on the market are:

Apricots, per box	80@1.00
Alligator Pears, per doz.	3.00@4.00
Apples, New	1.50@1.65
Apples, W. Astrachan	1.65@1.75
Apples, Belloflwers	1.15
Gravensteins	1.65@1.85
Alexander, lug	1.50@1.75
Crabapples, box	1.00@1.10
Cantaloupes, crate	2.00@2.25
Figs, box	75
Grapes, crate	1.25
Pears, lb.	3
Bartletts	1.75@2.20
Strawberries	4@5
Raspberries	6@7
Blackberries	7
Pineapples	6@7
Logans	6@7
Nectarines	41.25
Peaches, box	75@85
Plums, box	90@1.00
Prunes, box	75@1.00
Watermelons, lb.	1@1½

Dried Fruits.

Wholesale prices are:

Apricots	9@12
Evap. apples, fy, per lb.	8½@9
Peaches	5@8
Pears	8@10
Nectarines	8@10
Prunes	3@10
Plums	7@8

Beans Dried.

Wholesale quotations:

Limas, per ctl.	4.75
Pink, No. 1	7.25
Black eyes	4.55
Lady Washington	4.50
Small white	4.50
Garvanzas	4.50
Bayous	6.50
Lentils	6.00

Nuts.

Wholesale quotations are:

No. 1 soft shell walnuts	15
No. 2 soft shell	10
Walnuts, budded	16
Almonds, IXL, per lb.	17
Pecans, polished	14@16
Peanuts, Eastern	7¼@7½
Peanuts, Cal.	5@6

Honey.

Wholesale quotations:

Extracted water white	8¼
Extracted light amber	6½
Comb W. W.	18
Light amber	15
Beeswax	30

Hay.

Buying prices f. o. b. cars L. A. are:

Barley hay	8.50@11.00
Alfalfa	9.00@10.00
Wheat hay	10.00@12.00
Tame oat	11.00@13.00

Grain.

Wholesale selling price f. o. b. Los Angeles:

Wheat, new, per ctl.	1.90@1.95
Corn	1.80
Popcorn, ctl.	3.00@3.45
Egyptian corn	1.85
White oats	1.90
Seed Rye	2.10
Seed Barley	1.30

Feed Stuff

Wholesale selling price f. o. b., Los Angeles:

Cracked Corn	1.85
Cracked Wheat	2.05
Shorts	1.80
Bran	1.55
Oil cake meal	2.50
Feed Meal	1.90
Rolled Barley	1.25

San Francisco Markets

SAN FRANCISCO, Aug. 2, 1910.

Butter.

Butter advanced after last quotations till it stood at 32 on Saturday. One point was lost from this Monday, which leaves it still strongly in advance of last week's quotations. Market firm.

The official quotations of the San Francisco Wholesale Dairy Produce Exchange for today are as follows:

California extras, per lb.	31
California firsts	30
California seconds	28

Cheese.

California flats, new	12½@14½
Cal. Young Amer. fy. new	16½@17

Eggs and Poultry.

The tendency for eggs has been upward with strong condition on market. They now stand at 1½ advance of last week.

Official quotations of the S. F. Wholesale Dairy & Produce Ex. are:

Fresh ranch extras	32½
Firsts	30
Seconds	23
Thirds	20
Hens, per doz.	4.50@10.00
Roosters, per doz.	5.00@10.00
Fryers, per doz.	4.50@5.50
Broilers	2.25@350
Geese	2.00@2.50
Ducks	4.50@7.00
Pigeons	1.50@2.25
Squabs	2.50@2.75
Belgian Hares, per doz.	3.50@6.00

Live Stock.

San Francisco prices gross weight:

Steers	3½@5
Cows and heifers	2½@4
Hogs	6@10
Calves per lb.	4½@6
Milk Lambs, unshorn	6@6¼
Wethers No. 1	5
Ewes No. 1	4½

Potatoes.

Wholesale market quotations:

River White, new, box	60@85

Vegetables.

Wholesale quotations:

Artichokes	35@40
Asparagus, per box	50@1.75
Beans, string, per lb.	1@3
Beans, Wax	2@3
Beans, Limas, lb.	5@6
Cucumbers, box	15@40
Celery, per crate	90@1.50
Chili Peppers, per box	35@40
Bell Peppers	6@7
Green Corn, sk.	1.00@2.00
Egg Plant, per box	50@75
Lettuce, per crate	4.50@5.00
Okra, box	60@75
Peas, per lb.	2@3
Rhubarb, box	50@75
Summer Squash, box 25 lbs.	85@1.00
Tomatoes	25@75
Garlic	3@4

Onions.

Onions, sk.	1.40@1.65

Citrus Fruits.

Valencias	2.00@4.00
Grapefruit	1.50@3.50
Lemons	2.50@5.50
Limes	5.50@6.00

Fresh Fruits.

Apricots, box	40@60
Apples, box	50@90
Apples, Gravensteins	1.00@1.15
Crabapples	50@1.00
Apricots, crate	50@65
Nutmegs	75@1.00
Figs, box	65@75
Grapes, seedless	1.00@1.25
Grapes, Muscat	75@1.00
Huckleberries, lb.	10@12½
Pears, large box	75@1.25
Bartletts, wrapped	1.25@1.50
Bartletts, ton	40.00@45.00
Peaches, box	40@75
Nectarines, red	65@85
Nectarines, white	40@65
Plums, crate	50@75
Tragedy Prunes, box	60@75
Blackberries	3.00@4.00
Raspberries, chest	7.00@10.00
Strawberries, chst.	3.00@5.50
Logans, chest	6.00@8.00
Pineapples, doz.	2.50@3.00
Watermelons, per doz	1.25@2.50

Dried Fruits.

Santa Clara prunes	3¼@3½
1 cent premium for larger sizes.	
Apricots per lb. Royal	9@10
Peaches	5@5½
Apples, evap.	7½@7¾
Pears	5@7½
Figs	3¾@5
Nectarines	5@6
Plums	7@8

Futures on 1910—Apricots, 9½@10½; Moorparks, 11@12. Peaches, 5½@6½. Prunes, Santa Claras, 3¾@4¼, 1 cent premium. Figs, 3½@5.

RAISINS—1909 crop, f. o. b.; fancy seeded, 16-oz. cartons, 5@5¼c; do, 12-oz., 4½c; do, choice, 16-oz., 4½@4¾c; choice. 12-oz., 4c; 50-lb. boxes loose Muscatels, standard, 4-crown, 4@4½c; 3-crown, 3¼@3½c; 2-crown, 2½@3c; seedless Thompson, unbleached, 3c; do, bleached, 5@6c; Sultanas, unbleached, 2¼c; do, bleached, 4@4½c; Muscatels, unbleached, 2¼c; London layers, clusters, 2-crown, 85@90c; 3-crown 90c@$1; 4-crown, $1.30@1.50; 5-crown, $1.75@2; 6-crown, $2@2.50.

Nuts.

Walnuts, S. S. No. 1	13½
Walnuts, hard shell	13
Almonds, '09, N. P. U.	13½@14
Almonds, '09 Nonp	15@15½
Almonds, I X L	14@14½
Pecans	15@17
Chestnuts	14@15
Peanuts	5@6½

Beans Dried.

Limas	4.45@4.60
Pink	5.80@6.00
Black eyes	5.60@5.75
Small white	3.90@4.05
Large white	3.80@4.00
Kidneys	6.75
Garvanzas	3.25
Bayo	6.35@6.50
Horse beans	1.75
Red Mexicans	6.00
Cranberry	4.50@4.75

Hops

Hops, 1909 crop	10@14
Hops, 1908 crop	8@10

1910 contracts now being made at 12 @14 cents.

Honey.

White comb	14@15
Amber	10@12
Extracted W W	7½
Extracted light amber	6½@7
Beeswax, per lb.	24@30

Hay.

Scott, Magner & Miller report:

Arrivals of hay for the week have been 4600 tons, which is a little increase over the arrivals of last week. Market conditions have not changed to any noticeable extent, excepting that it is a little more difficult to effect removal of the medium classes of hay arriving daily by the cars and boats. A fancy type of hay sells readily.

The trade generally complains of the lack of any activity in the business, which at this time of the year has formerly been the busiest of the season.

The railroad companies have not been able to supply the shippers with the necessary cars to move into market the large lots that have been purchased through many of the districts, and if enough cars had been available this market would have received a great deal more hay and it is thought that prices would not have been as well maintained. There has been some hay shipped recently for export to Hawaiian Islands and to Manilla, which has relieved the market in a certain way to a small extent.

Fancy wheat	12.50@13.00
No. 1 wheat or wh and o.	11.00@12.00
No. 2 wheat or wh and o.	9.00@10.00
Choice tame oat	11.00@12.00
Other tame oat	8.00@10.00
Wild oat	7.50@9.50
Stock hay	5.00@6.00
Alfalfa	6.50@10.30
Straw	40@55

Grain.

Wheat No. 1	1.62½@1.67½
Barley, good to choice	1.07½@1.11¼
Barley, poor to fair	-1.00@1.05
Oats, white	1.42½@1.47½
Rye, new crop	1.50@1.60
Corn, large yellow	1.55@1.60
Alfalfa seed	16@18
Mustard brown	3¾@4¼
Millet	2½@3
Flaxseed	4½@5
Broom corn seed, per ton	23.50

Feed Stuff

Bran, per ton	23.00@25.00
Feed cornmeal, per ton	34.00@35.00
Cracked corn	34.00@35.00
Ground barley, per ton	23.00@25.00
Rolled oats, per ton	28.00@29.00
Middlings	32.00@34.00
Oil cake, per ton	38.50@40.00
Cocoanut cake per ton	25.00
Mixed feed, per ton	24.00@30.00
Shorts	24.00@26.00

Deciduous Market

SACRAMENTO, July 30, 1910.

The following circular of the California Fruit Distributors gives number of cars of deciduous fruit shipped from all points in California for the week (7 days) ending Friday, July 29, 1910.

Peaches.

Three hundred and forty-four and three-fourths cars. Another heavy gain in the shipment of peaches is shown this week. Large quantities have been sold in the f. o. b. territory and the demand continues all that could be desired. Auction markets also are doing very much better. Heavy shipment has now been made and it is expected that receipts will drop off quite rapidly from this time on until Salway season opens about the middle of August.

Plums.

One hundred and twenty and three-fourths cars. As expected, movement of this fruit has fallen off materially and will continue to decline for the next ten days. Giant, Gros, Hungarian, Kelsey and Grand Duke are practically the only varieties now available.

Pears.

Three hundred and eighty-nine cars. Shipment of this variety shows a slight falling off, but not nearly so much as was expected. It may be stated that the Sacramento River section is now done and by far the greater portion of the shipments are coming from outside points where the crop is rapidly nearing its close. The quality of the fruit was never finer.

Grapes.

Fifty-seven and three-fourths cars. Thompson seedless grapes are now going forward in considerable quantities and there have been a few cars of Rose of Peru sent out. Some Malagas from the earlier sections have also gone forward. Movement of all these varieties will show considerable increase during the coming week.

Weather conditions have remained very favorable since our last report. All fruits are developing finely and grapes in particular promise to be of unusually good quality. There is no question but that the crop of Tokays has been shortened up materially by the very hot weather that we had earlier in the season. It is impossible at this time to accurately estimate the amount of damage, but it will certainly have its effect on the output.

Citrus Market

LOS ANGELES, Aug. 3, 1910.

The situation as to Valencias is very avorable, though some embarrassment s caused by the disposal of excess of mall sizes. Prices are running practically as last week, with not far from 500 cars yet to go. Shipments are ow averaging about 45 cars daily.

The lemon market is still stronger han last week, influenced principally y the warmer weather of most eastern sections; also in part by shipments eing somewhat less than anticipated. The shipments are in fact materially ower than last year, which was not up o standard. The promise for a large all pick is not the best ,so there will e no question that all which will be ut from now on will command satisfactory price.

hipments.

Total shipments of citrus fruits to date since November 1, 1909: 27,671 ars, of which 23,678 were oranges and 993 were lemons. To same date last eason, 34,366 cars, of which 29,028 were oranges and 5338 lemons.

NEW YORK, Monday, Aug. 1.—Thirteen cars oranges and 1 car lemons old. Market steady or oranges, firm n good stock lemons. Clear and warm.

ST. MICHAELS—	Avge.
Blue Globe, Riverside Exchange	$3.50
Red Globe, Riverside Exehange	2.60
California Orange, Riverside Ex.	1.80
Pansy, xf., Colton O. G. Assn.	2.20
Golden Strand	1.55
VALENCIAS—	**Avge.**
Titus Ranch, fy., San Mar. G.P.A.	4.45
El Toreador, sd., San Mar. G.P.A.	3.40
Titus Ranch, fy., San Mar. G.P.A.	4.55
Golden Flower, xf., Red. G. O. Assn.	2.45
Golden Gate, xc., Red. G. A. Assn.	2.40
Chess Queen, xf., Ely Gilmore F.	3.90
Bishop, sd., Ely Gilmore F.	3.30
Knight, Ely Gilmore F.	4.05
Regatta	3.00
Stag, A. C. G. Exchange	5.85
Pointer, A. C. G. Exchange	4.60
Rossmoyne, E. M. Ross	4.65
Red C, Covina Exchange	3.50
Cougar, Covina Exchange	3.95
Riverside Oranges, Riverside Ex.	1.70
Old Mission, fy., Chapman	7.15
Old Mission, ch., Chapman	6.10
Golden Eagle, sd., Chapman	3.50
Orchard, or., Nat. O. Co., Ventura	3.80
Standard, sd., Nat. O. Co., Ventura	2.60
Aurora, fy. or., E. E. Peycke Co.	5.20
Luna, E. E. Peycke Co	4.40

ST. MICHAELS HALVES—Blue Globe, $1.55; Red Globe, $1.20. GRAPEFRUIT—Boxes, Stag, $3.55; Rossmoyne, fy., $2.35; Standard, $1.25; halves, Orchard, $1.30. LEMONS—Rialto Crest, $4.25; Rialto Girl, $3.95; Independent, fy., $4.90; Choice, $3.95.

CLEVELAND, Aug. 1.—One car Valencias sold. Market higher. Cool.

VALENCIAS—	Avge.
Iris, D. M. Duarte	$4.55
Jasmine, D. M. Duarte	3.95
Violet, D. M. Duarte	4.30
Stock Label, D. M. Duarte	2.25

CINCINNATI, Monday, Aug. 1.—Warm. Market steady. Two cars lemons and two cars Valencias sold.

VALENCIAS—	Avge.
Pet, S. A. Echxange	$4.15
Thoroughbred	3.70
Seal	3 10
El Capitan, S. A. Exchange	3.05
Summit	3.15
LEMONS—	**Avge.**
Old Glory, Q. C., Corona	$5.75
Bridal Veil, Limoneira Co	5.65
Silents, Q. C., Corona	4.05
White Cross, Limoneira Co	5.30

SWEETS—Grizzly Giant, $2.35.

PHILADELPHIA, Monday, Aug. 1.—One car Seedlings and one car lemons sold.

LEMONS—	Avge.
Euclid, or., Growers' F. Co	$6.30
Standard, Growers' F. Co	4.50
Flower, fy., Growers' F. Co	5.80

SEEDLINGS—Heap Good, fy., Pattee & Lett, $1.70; California, ch., J. Curtiss F. Co., $1.55.

PITTSBURG, Monday, Aug. 1.—Six cars sold. Market easier on oranges under a light demand. Steady on lemons.

VALENCIAS—	Avge.
Lotengo, fy., Sparr F. Co	$4.05
Pomona, S. A. Exchange	3.05
Stock Label, D. M., Monrovia	2.85
Coyote, O. K. Exchange	2.75
Jasmine, D. M., Monrovia	3.50
LEMONS—	**Avge.**
Parrot, S. A. Exchange	$4.55
Pomona, S. A. Exchange	3.60
Queen, ch., Sparr F. Co	4.45
Hawk, S. A. Exchange	3.90
Mtn. Crest, S. A. Exchange	2.95

SWEETS—Lotengo, $2.80; Del Oro, $2.40.

BOSTON, Monday, Aug. 1.—Seven cars sold. Warm. Market unchanged.

VALENCIAS—	Avge.
Pointer, A. C. H., Charter Oak	$4.75
Topaz, xc., C. C. U.	4.35
Fiesta, Riverside Pechappa	4.00
Hunter, A. C. G., Charter Oak	2.90
Flamingo, or., C. C. U.	2.35
Pond Lily, Riverside Pachappa	2.95
LEMONS—	**Avge.**
So. Beauties, Q. C., Corona	$4.50
Punch, S. T., Colegrove	4.35
Just Rite, Q. C., Corona	4.00
Club, S. T., Colegrove	3.90

ST. MICHAELS—Squirrel, $2.85; Palm Tree, $2.15. HALVES—Squirrel, $1.45. GRAPEFRUIT—Squirrel, $3.70. SEEDLINGS—Topaz, $3.25.

ST. LOUIS, Monday, Aug. 1.—Favorable. Market strong on Valencias of good quality. Six cars sold.

VALENCIAS—	Avge.
Pomona, S. A. Exchange	$4.30
Red Globe, Riverside Ex., Riv.	4.40
Riverside, Riverside Exchange	2.10
Hawk, S. A. Exchange	3.45
Cal. Orange, Riverside Ex.	3.90
LEMONS—	**Avge.**
Squirrel, A. H. Pachappa	$4.65
Home, Q. C., Corona	4.80
Excelsior, ch., C. C. U.	3.25
Loma, ch., Limoneira Co	5.20
Palm Tree, A. H. Pachappa	4.55
Camel, Q. C., Corona	4.00
El Toro, sd., C. C. U.	2.65

NAVELS—Pomona, $3.10. ST. MICHAELS—Pomona, $3.85; Red Mtn., $2.50. HALVES—Pomona, $1.40. BUDDED—Pomona, $2.30. SWEETS—Pomona, $3.20.

Queries

(Continued from Page 114.)

head under until the bird strangles, is about as cheap and reliable a cure as can be found, treating it twice a day until cured, and anointing the head after each treatment with camphor salve, weak: say an ounce of camphor gum to 16 ounces of vaseline, or in that proportion, melting the vaseline and adding the gum, keeping hot, but not boiling, until the gum is dissolved. This is a very excellent salve to have handy, anyway, and will pay to make, even if the price of camphor gum does take your breath away. The permanganate alone will cure, but takes time, and the camphor salve will hasten the cure, at the same time allowing the bird to swallow a little of the permanaganate solution. To make the solution put five cents' worth of the permanaganate in a quart of warm water, and shake it occasionally until disolved, then pour off a tablespoon to a teacup of water and dip.

Another good dose is boracic acid. Pour boiling water directly on the powdered boracic acid until the water will take up no more of the powder. Cool enough not to blister and apply with cotton batting, keeping two pads of the batting, applying them alternately as fast as they dry, and you will find the swelling will go down like magic. Then dry and apply the salve, and I think your turkeys will soon be better, especially if they have plenty of fresh air at night.—Mrs. Metcalf.

Profit from 2000 Chickens.

How much can I net from 2,000 hens if I do all the work and buy feed in several ton lots and exercise great care to secure good stock? Chickens will have range over 15 acres of lemons fenced off in four or five different lots. Would that be range sufficient for 2000? What variety would you advise?—Subscriber, San Diego.

How much any man will make, or lose, on 2000 chickens, or any other number, it is impossible for any one but the man himself to say. Some have tried to establish the claim that each hen is good for one dollar net profit each year, and in small numbers have made more than that, and yet others with large numbers, have lost money and gone broke. It is a business proposition the same as the grocery, the bank, or any other, and its success or failure depends upon judgment and ability to work hard. As to the best breed, that, like the other question, depends upon the man. Whichever of the standard breeds he will take most pride and pleasure in will probably net good profit if he gives them intelligent care and buys his supplies at rock bottom prices at the season of the year when they are cheapest. Fifteen acres is sufficient range for 2000.

Business Notes

NITROGEN—THE INDISPENSABLE.

The great fight of the farmer in every corner of the earth is for the acquisition and conservation of that most important to agriculture of all the elements—Nitrogen.

According to Snyder about two per cent of the soil nitrogen is ordinarily available. Many grain crops cause a loss of more of it than is used by the crop, while one year of fallowing land has caused a loss of five pounds of nitrogen for every pound made available. Organic manures, unless well-rotted, dissipate some nitrogen probably through the oxidation of a portion of the organic matter.

It therefore behooves the farmer to exercise a wise discrimination in the choice of nitrogenous manures.

"A long list of experiments," says the author of Saline Deposits of California, "carried out in many places shows that nitrate of soda is the best source of nitrogen for the orange."

Nitrate of soda plays a double role in its deportment in the soil. Besides furnishing the best as well as the cheapest nitrogen for the farmer, the claim long made that it renders the native supplies of potash in the soil available has been experimentally proved in the laboratory of the Nitrate Agencies Co., in Los Angeles. A soil containing 0.37 per cent potash yielded to solution of nitrate of soda 0.11 per cent or nearly a third of that potash.

When it is remembered how much potash some soils contain—e. g., 1.14 per cent in the "fine earth" of a certain soil of the San Gabriel Valley—the importance of this property of nitrate can hardly be overestimated.

ADVANCING.

The Polytechnic Business College, Oakland, California, was established twelve years ago and at that time occupied but two small rooms and had a very limited number of pupils. But it has been steadily advancing. The intervening years have been years of patient effort in the preparation of young men and women for the battle of life. That work is going on with increased vigor and better preparation. It has had its reward, for today the Polytechnic College is the largest and best equipped business training school on the entire Pacific Coast. There are always good business openings for its graduates, in fact we are told that the demand for its trained help is greater than the supply.

There is at this time being added an engineering college building. It will be thoroughly equipped with machine shops, forges, electrical laboratory and all necessary tools for teaching engineering in a practical manner.

The school has just issued a new and beautifully illustrated catalogue which gives full particulars concerning the various branches taught by this school. When you write for this catalogue if you will mention the Cultivator it will be sent by return mail. It is an interesting book and should be in the hands of every ambitious young man and woman in the state.

THE LUNGS OF AN ENGINE.

The mixer on a gasoline engine; the carburetor on an automobile and the lungs of a man, are equally important and in each instance fill the same office. That is, they supply the vital power necessary. The human being, of course, requires more air, and the lungs are called upon for more active service when working than in repose, and this supply is so automatically regulated that we seldom give it a thought. The same requirements exist with an engine. As the load is increased, means must be provided for increasing quantity of fuel and air fed to it.

J. B. Seager, general manager of the Seager Engine Works, has hit the nail square on the head with the mixer which he is using on the Olds engines. This is a patented idea of his own and has the distinctive feature of supplying the proper proportion of gasoline and air to the engine without the use of a gasoline pump and without employing a single moving part. The mixer once set, remains in adjustment, and the suction of the engine piston draws in its charge for each working stroke so that the more numerous the strokes the greater the supply.

In its operation it is the nearest approach to the human lungs of any gasoline mixer.

CANNING ORANGES.

It is said that the large meat packers of the country make their greatest profit from what were at one time considered wastes. Our fruit growers have this lesson to learn, for there is a vast quantity of fruit wasted in this state. Canners as a rule demand the very best of our fruits. But a few days ago we saw a new feature in canning of oranges. This is a case where, instead of the finest, culls are used. The oranges are peeled and either sliced or quartered, and, through a new process, their color is retained so that they have every appearance of the freshly sliced fruit. The best part of it is that the canning appliance is a simple one, which may be used upon any ranch. It is called the Bartlett Canner and may be used in canning all fruits. It may be set up in the house or under a tree in the yard, and its working is so simple that many fruit growers have found it most profitable. One lady in the Sacramento Valley writes that whereas the dealers would only offer her a price that would barely pay for picking, she used one of these canning devices and cleared $1000 from her apricots in one season. This appliance is handled by the Canners' Supply Co., 120 North Main St., Los Angeles. It is worth getting further information upon, and a letter to Mr. Stevens, the manager, will receive prompt attention.

MAINSTAY IN THE DAIRY.

Your wellbred cow, if kept in good condition, will respond to feed when giving milk. It is well known that certain foods are milk producers.

On a pasture of green grass the flow will continue much longer than on hay, hence it becomes necessary as the pastures dry up to supply that which most nearly takes the place of green grass. Those fortunate enough to be located near a sugar factory can easily obtain a succulent food at comparatively slight cost.

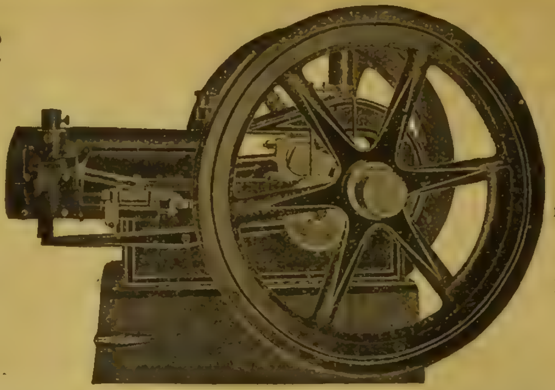
A prominent dairyman who, if possible, feeds pulp the year around, makes the statement that "sugar beet pulp is the mainstay of the dairy business."

The most profitable milch cow is the one that comes the nearest to milking the year around with only the proper interval before again becoming fresh.

A NEW IDEA.

It is said that there is "nothing new under the sun," but if one will look into the construction of the New Idea Manure Spreaders he will find an idea never yet used in this connection. The Western Implement Co., which has an advertisement in this issue of the Cultivator, is advertising the "New Idea" spreaders. The company has sold a large number of these in California and has some very strong testimonials.

If you are interested you ought to have the very complete catalogue of farm implements it mails free. The address is 131-133 N. Los Angeles St., Los Angeles.



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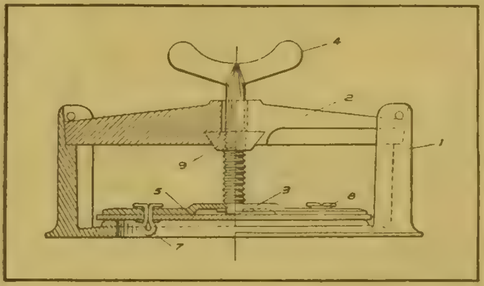

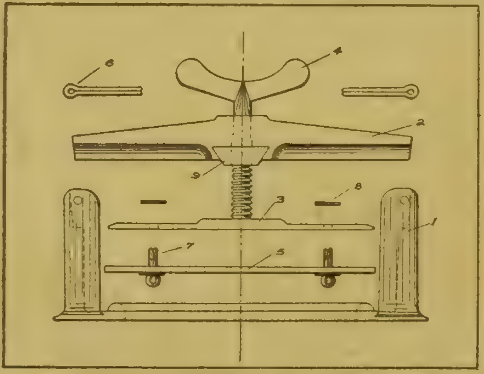

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7 Cotter Pin
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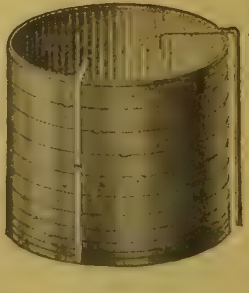

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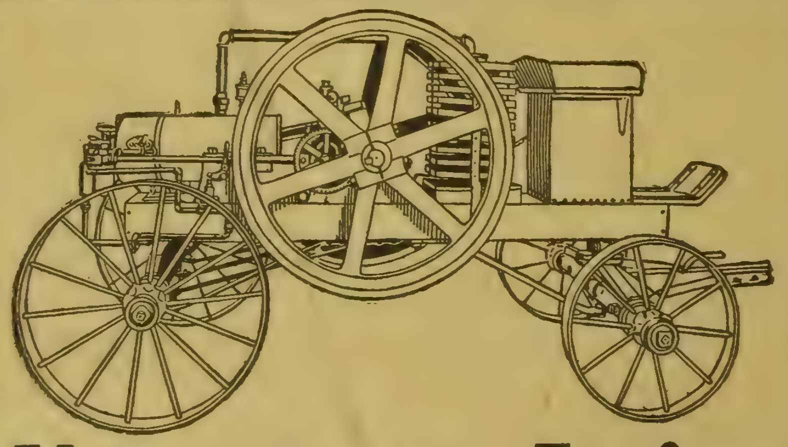

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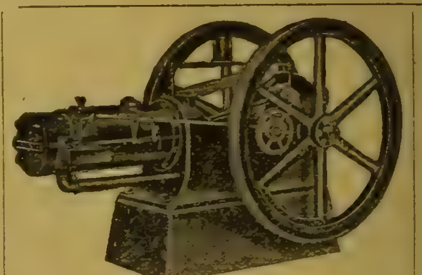

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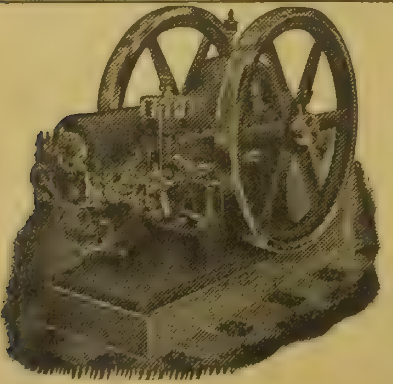

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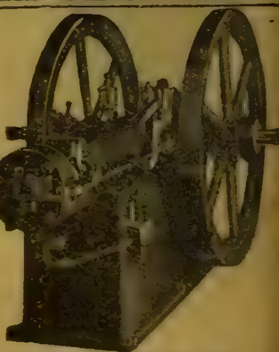

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California Cultivator

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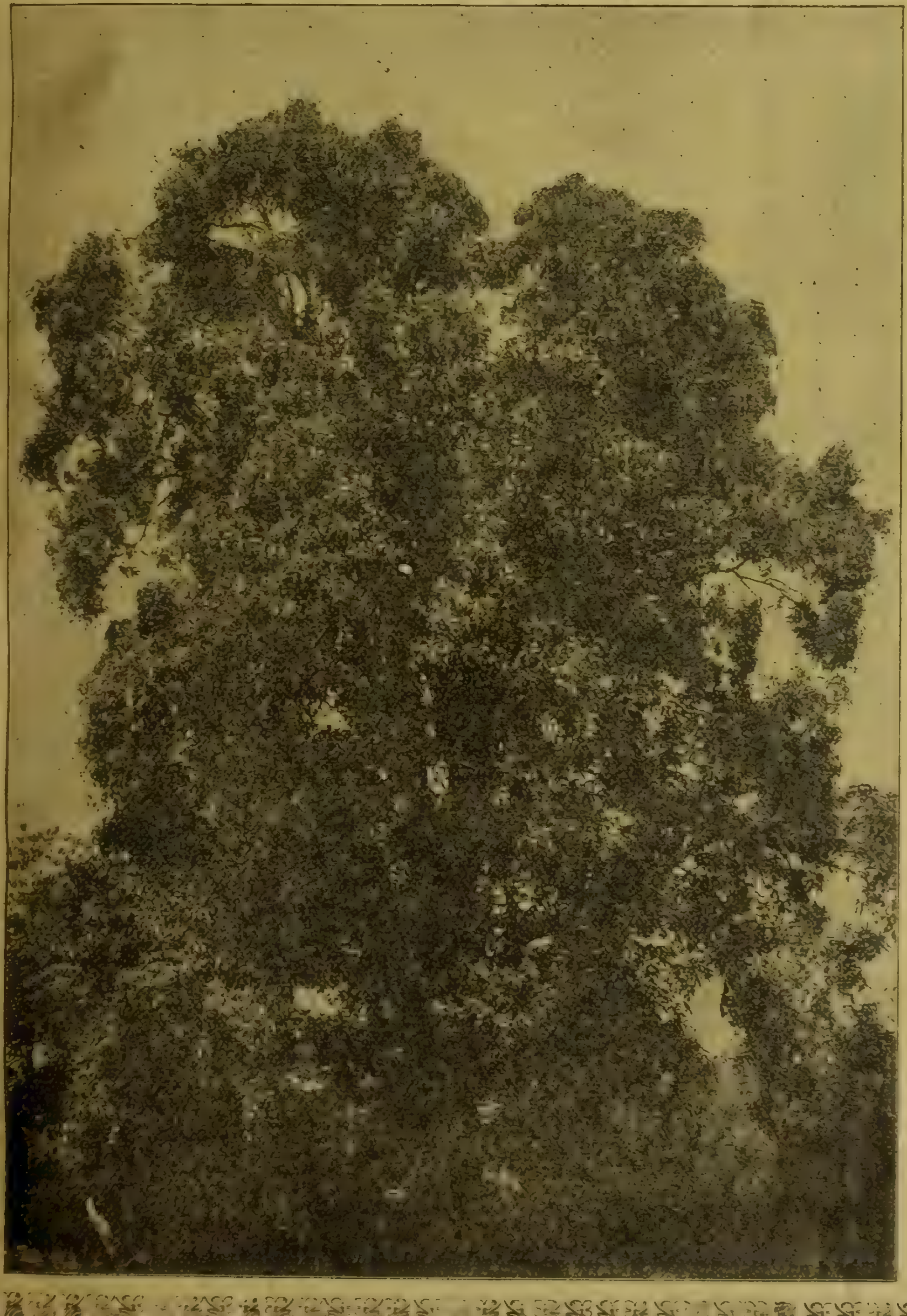
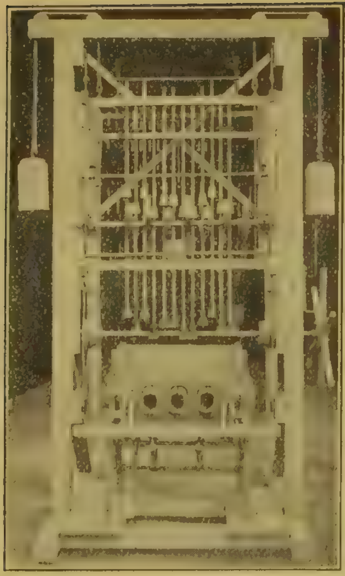
Los Angeles August 11, 1910 San Francisco

Magnificent Specimen of Hawaiian Island Mango



THE mango tree is an evergreen with a round, dense top, producing small flowers and is a most beautiful tree. It has been grown in Florida and to a limited extent in California for ornamental purposes. It is also proving most profitable in some cases. Most of the trees are seedlings and vary much in the quality of the fruit. The tree is a native of India, where its fruit is a staple article of food during the hot months. In the tropics generally it is eaten raw, either plain or sliced with a sour wine. Some have complained of the resinous or turpentiny taste, even comparing the fruit to a mixture of tow and turpentine, but this is the case only with fruit of a low grade. It was first brought to Brazil in the New World, whence it drifted to the Barbados and later to Florida and California. The trees of Florida were destroyed at the time of the '86 freeze. Two of the trees destroyed by the Florida freeze produced in their eighth year from the seed 19,000 fruits. These were shipped to Chicago and brought in the neighborhood of sixty cents a dozen. This photograph is from a tree in the Hawaiian Islands.



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Choice trees, 3 to 14 feet, from 20c each and up; special low prices on lots of 200 and over. If contemplating planting a walnut grove, it will be to your interest to correspond with us at once, as the stock is limited and the price sufficiently attractive to clean it out quick.

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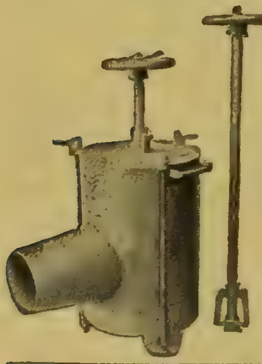

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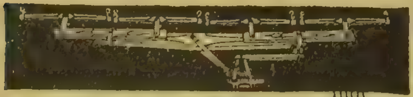

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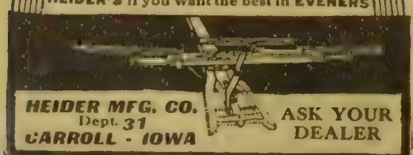

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Owens Valley Land

See Announcement on Page 139

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California Cultivator

Vol. XXXV—No. 6 Los Angeles, California, Thursday August 11, 1910 Subscription $1 a Year

Celery Blight May Be Controlled With Bordeaux

Written by S. S. ROGERS, Expert of Southern California Pathological Laboratory, Whittier

Practical Hints on Methods and Formulas Given.

CELERY BLIGHT is a disease which is well known to every celery grower in Orange county. The cause of the blight is a fungus and there are in the celery fields two kinds, the Summer or Early Blight, Cercospora, and Winter or Late Blight, Septoria.

Early Blight.

This disease is spread quite generally throughout the state, although the loss is very small. It appears on the plants early in the season, generally while still in the seed bed, and the lower outside leaves are usually the first to become infected. From here it spreads on to the inner leaves but is never found on the stalks. On the leaves it is seen as brown spots, and its growth is favored by hot, moist weather. If the disease is serious, spray with Bordeaux mixture at 5-6-50. Thorough cultivation and, in fact, any operation that will favor quick-growing, healthy plants is strongly recommended.

Late Blight.

This disease has caused extremely large financial losses throughout the celery sections of the state, but more especially in Orange county. In this latter place it first began to be of importance in the fall of 1907, and in 1908 the crop was nearly destroyed.

Appearance in the Field.

The lower outside leaves are the first to become infected and from here this disease spreads quickly onto the other leaves and stalks. On the leaves it can be seen in small brownish spots, which later turn black. These spots often form in clusters, but where the leaves are badly affected these clusters cover the entire leaf surface. In many cases, as has already been mentioned, the blight does not only confine its ravages to the leaves but soon spreads onto the stalks. Here again it is seen in small, black spots, often in clusters at first, but later covering the greater part of the stalk, and when this part of the plant becomes infected the prospect for ever producing a marketable product is very slim.

When this disease gains a foothold in the field it spreads very rapidly, especially if the weather is warm and moist, and in a few days a large acreage is destroyed. As would be expected, the blight invariably makes its first appearance in the low, wet, poorly drained spots, and from here soon spreads to other parts of the field.

Control.

The celery plants, where there is any danger from the above disease, should be sprayed with Bordeaux mixture, at least twice while the plants are in the seed bed, especially if they are grown on land on which the celery of the preceding year had blighted. Upon setting the plants in the main field they should be sprayed

(Contnued on Page 138.)

A Practical Experiment in Cost of Production

By AUGUST WOLF, Spokane

DAVID BROWN, president of the Hazelwood Company, operating dairy plants at Spokane, Walla Walla and North Yakima, Wash., Portland, Ore., and Caldwell, Idaho, also more than 100 milk stations between the International boundary and Northern California and Montana and Puget Sound, announces that he will press his request to have the federal goverment delegate a competent investigator to run his business for from 90 days to a year to assist in solving the problem of the present high cost of living in the United States. Mr. Brown has given out this statement:

"Government regulation of business is not coming. The fact is, it is already here. Whether we like it or not we shall sooner or later all have to submit to it. All of the people, as represented by the government, will not continue to permit a few, those who control the business industries of the country, to dictate in large measure, or in any measure, the conditions under which we may live, or the prices which they shall pay for the necessities of life. I recognize this condition and am not only ready, but perfectly willing, to submit to it.

"When a private business grows to such dominating importance that people compelled to do business with it begin to suspect that it is able to dictate the terms upon which that business shall be conducted, it is but natural for the people to begin to look into the methods it employs in conducting its affairs. I do not resent this curiosity. It is the people's business to want to know about how the industries of the country are conducted, and so far as my own business is concerned I am perfectly willing that that curiosity should be gratified.

"In inviting the government to send an agent to take charge of this business I do not expect, of course, that a man will be sent who will look upon it as an opportunity to establish a theory of how business should be conducted. I expect that a competent business man will be sent who can look into it and direct its operation with a view of making the business more useful to the community. What we want to do is to discuss the matter, experiment, if necessary, and work out the best ideas.

"We should begin with the idea that the people must have food. If we are to have food, we must pay such prices for it as will induce those who produce it to continue producing it. I believe we should go a step farther than this. I think that we should so regulate our lives and the prices which we pay for food products that those who produce them can live in comfort, have good homes, live according to a high standard and rear families to be good citizens.

"We must make up our minds to pay the farmer enough for his products that he will be willing to remain on the farm. To do this we will have to pay him enough so that he can live in comfort. Our best citizens come from the farm and we should certainly do nothing as a government or as a trading community which will reduce the supply of these best citizens.

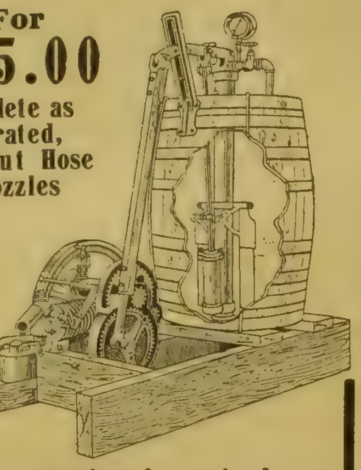
"A business which makes money and destroys the home is not a successful business, from the standpoint of the community and should be discouraged by the community. The industry which helps the most men and women and helps them most in their efforts to procure for themselves good homes, to establish for themselves a high standard of living, and to become good citizens, is the best kind of business for a community.

"The government, representing all the people, should discourage those businesses and those business practices which militate against good homes and a high standard of citizenship, and should encourage those businesses and those business practices which make possible good homes and good citizenship.

"We hear a great deal now-a-days about the undesirable citizen. To my mind the undesirable citizen is the citizen who is unable to or who is not permitted to earn enough to enable him to maintain a high standard of living and of citizenship, and to rear his sons and daughters in such a manner that they will be a credit to the community.

"In this experiment, which I have asked the government to undertake, there are several ways in which benfit might result, both to the company and to the community which it serves. We manufacture butter on what is practically a fixed margin, paying the farmer for the butter fat just one and a half cents a pound less than we get for the butter. The question will be raised whether we are charging too little or too much, whether we are failing to give the producer or the consumer a square deal, and if not, whether the business could not be managed, with a fair profit, and still do so. Other questions are:

"Are we giving sufficient encouragement to the man who milks and feeds the cows? Are we charging the consumer more than he should be charged for the product? Are we making the best product we can practically make, and is it made under the safest and most modern conditions?"



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Citrus and Sub-Tropical Fruits

THE MAGNESIA-LIME TROUBLE IN CITRUS ORCHARDS.

By R. R. Snowden, Chemist and Soil Engineer, Los Angeles.

REFERRING to my article in the June 16th issue of the "Cultivator" on the yellowing of the leaves of the lemon, the conclusions then expressed have since been verified, particularly with regard to the orange.

A number of analyses of soils made since and prior to that time have been carefully collated with reference to their magnesia-lime contents and the condition of the respective orchards from which such soils were taken.

Loew has said: "The proportion of these two constituents in soils (magnesia and lime) is a more potent factor in the resulting crop than is generally supposed." Certainly an examination of the table below should leave little doubt that excess of magnesia beyond a certain proportion of lime in the soil is responsible for many—though not all—cases of malnutrition in citrus trees in Southern California at least, if not elsewhere.

In general there are two methods of reaching a conclusion, namely: the deductive, and the experimental. And a deduced conclusion may be as reliable as an experimental one. For instance, suppose there are in the mountains a number of large springs differing widely in their dissolved mineral contents, the outflow from some one of which runs by us. Should the analysis of the water of this stream coincide exactly with that of a certain one of these springs we may as legitimately conclude that this stream takes its rise in that particular spring as though we secured experimental proof by tracing the stream to its source.

Although I have not yet transformed a chlorotic, unthrifty orchard into a green and thrifty one, by the means I shall suggest, yet I will present deductive proof that it can be done.

In all this work account is taken only of the available lime and magnesia in the soil, since we are not now concerned with the possible stores of material locked up in practically insoluble forms to become available through the operation of geologic processes within the next thousand or so of years; and which are providentially preserved against the rapacity of the present for the use of generations unborn. It is readily seen that analyses showing the total lime and magnesia content of the soil would be entirely valueless for our present purposes, since they would utterly fail to furnish the practical information so manifest in the table.

With a few apparent but easily explained exceptions, it is seen that just so soon as the lime content drops below 2 to 1 of magnesia there is serious trouble in the citrus orchard.

X-1.

Nos. 326 and 339 although containing 2.53 and 2.07 parts of lime respectively to one part of magnesia, are found in the sickly class when apparently they should be in the thrifty. This is due to the fact that both these are heavy clay soils and the lime in each is below the minimum of adequacy regardless of magnesia. Besides this, No. 339 is very high in total soluble salts. When the rule laid down seems to fail other operative causes may be looked for.

X-2.

No. 247 is seen to be still thrifty although below the provisional "deadline." This is the subsoil of number 246 with its 2.42 parts of lime, which may assist the subsoil. And besides this, the large actual amount of lime, —1.47 per cent—may be sufficient to set aside the rule holding good with smaller percentages.

X-3.

In Nos. 296-7 where the lime has dropped down to 0.67 part to 1 of magnesia the trees might be expected to be badly affected instead of "getting mottled"; but this apparent discrepancy has served to throw further light on the subject in that it shows that the thorough cultivation and generous fertilization with superphosphate and nitrate of soda received by this orchard have visibly restrained the injurious action of the excess of magnesia. This orchard has vacillated between incipient chlorosis (mottled leaf) and a condition of comparative greenness as the different applications of fertilizers were partially exhausted and then renewed. The same experience of delaying the evil day by thorough culture and generous applications of these same fertilizers has been exemplified in the case of Nos. 311-3, although owing doubtless to the high actual magnesia content in this soil the fight has not proved so successful as in the other case.

In this case the trees (orange) have received in the 22 months up to May 3rd, 23½ pounds of superphosphate, 11 pounds nitrate of soda and 21 1-5 pounds of other fertilizer per tree, and two legume cover crops. In this time they yielded per acre, in the season of 1908-9, 350 boxes, and the last, 240 boxes. "The leaves are small and brittle, and the trees bloom over-profusely and consequently drop over-heavily. The hot spell of May 3rd again made the bloom and leaves drop."

Where the lime and magnesia are both low, the excess of magnesia is manifestly more easily controlled, as seen in the case of Nos. 296-7. But when so controlled by the even generous use of the ordinary fertilizing materials the margin of safety is so

Lab. number.	Found		Proportions.		Condition of the trees.
	Mag. per cent.	Lime. per cent.	Mag. part.	Lime. parts.	
242	.07	.24	1 to	3.43	Thrifty, orange.
226	.11	.24	1 "	3.41	Thrifty, lemon.
240	.10	.29	1 "	2.90	Thrifty, orange.
326	.19	.48	1 "	2.53	Smwht mttld, orng. X-1
374	.13	.32	1 "	2.46	Very thrifty, orange.
246	.19	.46	1 "	2.42	Thrifty, orange.
339	.28	.58	1 "	2.07	"Doing badly," or'ng'. X-1
373	.078	.16	1 "	2.05	Thrifty, orange.
372	.09	.17	1 "	1.90	Somewhat mottled, or'ng'.
247	.79	1.47	1 "	1.86	Thrifty, orange, X-2.
338	.21	.28	1 "	1.34	Badly mottled, orange.
296-7	.12	.08	1 "	0,67	Getting mottld, lemn. X-3
311-3	.71	.45	1 "	0.64	Very unthrifty, orange.
256-8	.49	.24	1 "	0.49	Decidedly yellow, lemon.

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Total Soluble Salts,
Phosphoric Acid,
Potash, Lime, Magnesia,
Adequacy or Inadequacy
of Humas and Nitrates;

and these determinations will have reference to the materials now subject to the use of the plants. I will also give a mechanical analysis of the soil. This is all that is necessary to know for practical purposes and is much cheaper than a complete analysis. If the orchardists realized the profitableness of this information to them, everyone would want this work done at once.

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Owens Valley Land
See Announcement on Page 139

small that the trees might be expected to experience the vacillating tendency mentioned above.

Nos. 372 and 373 are different parts of the same orchard, with 374 an adjoining one. In No. 372, where lime is but 1.90 to 1 the trees are affected, while in No. 373 where it is 2.05 the trees are apparently healthy. In No. 374 with its 2.46 parts of lime the trees are reported as having phenomenal growth, and fine looking.'

The Cure.

I have made some experiments to determine the comparative extent of the deterrent action of magnesium carbonate on the solubility of calcium carbonate and sulphate. Here are the results:

(a) One gram each of magnesium carbonate and calcium carbonate were shaken thoroughly with water and carbon dioxide.

(b) One gram each of magnesium carbonate and calcium sulphate were treated exactly the same as in (a).

(c) One gram of calcium sulphate was also subjected to the same treatment. In all cases the water was 50 cubic centimeters, and the carbon dioxide was about the same in each.

Results: In (a) 23 per cent (barring fractions) of the magnesia was dissolved along with but the merest trace of lime.

In (b) 18 per cent of the magnesia was dissolved along with 7 per cent of the lime. In (c) 10.36 per cent of the lime was dissolved, which represents the limit of solubility of calcium sulphate. The normal solubility of calcium carbonate is about in proportion to the free carbonic acid present.

It is thus seen that in the case of 100 parts of magnesia to 117½ parts of lime, both being carbonate, the lime was practically insoluble; while with only 86½ parts of lime as sulphate the magnesia restrained the solubility of the lime to the extent only of 3-10 of its full solubility.

The superior value of calcium sulphate for counteracting the injurious action of an excess of magnesia in the soil seems to be indicated by the above results. This also seems to explain the beneficial effects of the fertilizers named above, which were probably largely due to the gypsum present as a part of the superphosphate used.

Where there is good drainage and an abundance of water it would seem that the magnesia could be washed out without loss of much of the lime. but it must be remembered that calcium chloride is removed by leaching about twice as fast as magnesium chloride. Hence the combinations must be previously determined.

Where the injurious proportions of lime and magnesia prevail and the actual amounts are high, the cure by additions of a suitable lime salt becomes a serious matter. For instance, in the case of Nos. 311-3 it will require 207 tons of gypsum if 100 per cent pure to supply sufficient lime to a depth of four feet in one acre to bring the lime up to simply double the magnesia.

Although there is probably much yet to learn in this matter, and that other conditions may be found to modify or aggravate this injurious action, the writer feels justified at this time in drawing the following:

Conclusions.

1. In sand and loam soils in Southern California citrus trees demand at least twice as much lime as magnesia for their continued prosperity.

2. Thorough culture and generous fertilization may postpone the evil day, but cannot avert it without adequately supplying lime in a suitable form.

3. The sulphate appears to be the best form of lime to meet this trouble.

4. Many citrus orchards in California are probably near the borderline of safety, and unles the lime content is maintained in due excess of magnesia there will be just so many gradual failures in productiveness and general thrift, among them.

5. Where the actual quantities of lime and magnesia are small, the constant use of gypsum as a constituent of superphosphate has so far prevented such decline in these orchards.

6. This injurious action, like every other condition that reduces the vitality of the tree renders it less resistant to the attacks of insects and other enemies.

7. A very wet season should be followed by a period of greater freedom from the troubles arising from this condition, owing to the necessary removal, by leaching, to a greater or less extent, of the injurious excess of magnesia. Conversely, a very dry season should mark a greater prevalence of the trouble.

FLORIDA OUTLOOK FAIR.

During the past few days we have made inquiry concerning the citrus crops in this county and we are pleased to state that the outlook is flattering at this time. True the orange crop is not as good as it was last season, but grapefruit will be the crop that will bring in the returns. It is estimated that there will be a splendid crop of the latter.—Fort Myers, Florida, Press.

Like the rest of the counties in the orange belt, Volusia will not market over a half or two-thirds of a crop the coming season.—Volusia Record.

There is considerable bloom coming out on the groves around here, and the growers are wondering if the season of 1907-8 is to be repeated, when there was quite a heavy crop of fruit harvested from the June bloom.—Volusia Record.

There is quite a good deal of bloom in the groves at present, a thing usually not considered desirable. But one shipment of twenty boxes of late bloom grapefruit this year sold in New York for $95.00. If all late fruit could sell as well no one would grumble.—Florida Star.

The fruit crop is light owing to dry weather.—DeSoto News.

WHERE CLOVES COME FROM.

The principal source of the world's clove supply is Zanzibar and the neighboring island of Pemba, East Africa. A 10-year old plantation should produce twenty pounds of cloves to the tree. Trees of twenty years frequently produce upward of 100 pounds each. Besides the buds the stems are gathered and form an article of commerce, commanding one-fifth the price of cloves and having about the same percentage of strength. To this is due the fact that ground cloves can be bought at a lower price than the whole cloves.

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Deciduous Fruit Culture

FINER FRUIT.

I HAVE found the recent numbers of the Cultivator exceptionally instructive and interesting; especially did I derive benefit from the one on frost protection, also from articles on orchard fertilization. Along this latter line there are of course many problems still facing farmers which, as a general rule, they are trying to dodge. This results in the dollars dodging us.

What is now uppermost in my mind is;—How may I grow bigger and finer peaches? In the issue of July 28th Mr. Thorpe states very correctly that California soil is very uneven, that is, on the smallest place there may be both good and indifferent soil. This must be taken into account in the application of fertilizers. While my experience in California is less than five years, I have realized the truth of this statement for sometime, but the question is still before me how to grow better peaches.

The only way open to me seems to be to turn my twenty-acre peach orchard into an experimental farm. That will cost money, especially as some of these experiments are bound to prove a losing venture. Mr. Thorpe's formula may answer on my place; it may not: he has oranges, I have peaches. I know that my soil is short on humus, and we are raising all that is possible every winter, and if Mr. Gardiner will put his on top of mine I will thank him most sincerely. (Mr. Gardiner in an article entitled, A Hint and a Complaint, in the Cultivator of July 28th, referred 'to his trouble in plowing under green manure crop). Stable manure is not to be had in sufficient quantity, so that besides the green manure crop there is nothing to be had but the commercial fertilizers. Now I will state my case, and perhaps the Cultivator may give a hint in the right direction.

My soil is sandy loam and full of iron, packs very hard after irrigation yet will pulverize readily and leaves few lumps after cultivation. It is 20 feet to water. There are spots of ashy soil in places around me but none among these trees. I irrigate three times during the season, running small streams in furrows, 20 streams for six hours or more. It floods but little. This I find a very satisfactory way to irrigate—I learned this also from the Cultivator.

These trees are now in their fifth year and most of them have full crop this year as to number, but size is too small; even the trees which have a small quantity of fruit fail to size up. The soil is apparently rich enough to grow good trees, as they are bigger and thriftier in appearance than similar trees in other soil, but it is equally as evident that the stuff to make large fruit is lacking or, as I am inclined to believe, locked up in the soil. At least my alfalfa gives a double crop on the section where I have applied gypsum. I have used phosphates on three rows of the trees but it accomplished nothing.—Axel Kap, Kerman.

* * *

Mr. Kap is facing the same difficulty which all agriculturists face; the range of knowledge required of a good farmer is great and he must apply all he has and in addition observe intelligently the experiments he contemplates. One question seems to us worthy of consideration in view of the fact that these trees are growing thriftily and better than some others, and that is;—Are the trees of a variety and a strain that will produce the larger and more desirable fruit? We assume that on this point the inquirer is satisfied, but trees of a good variety sometimes persist in failing to give as large fruit as trees of the same variety on a neighboring ranch or possibly on the same ranch. However, as all the trees in the orchard seem to grow the smaller fruit, the experiments with fertilizers may lead to the solution of the problem. We believe the determination to continue to put humus into the soil is very wise. It will help to retain the moisture which is a most valuable factor. By the way, are the three irrigations per season sufficient? With water 20 feet from the surface they should be, but with the experiments contemplated we would try another with more frequent irrigation. We would also try one plot with a liberal application of some form of potash. The gypsum experiment would seem to indicate that the potash of the soil is locked up.

Can any of our subscribers lend a helping hand in this discussion.

On Main Canal, Tulare Irrigation District, Part of the Immense Irrigation System of Tulare County.

COLORADO FROST PREVENTION WORK.

WHEN on May 5th the orchardists of the Grand Valley removed their smudge pots from between the trees and declared all further danger from frost past, the manufacturers as well as the ranchers breathed a deep sigh of relief.

The system of orchard heating, experimented with now for three years, had pased successfully through the most difficult ordeal in the brief history of its use, and the future of the fruit industry in the Grand Valley was assured for all time to come. Not only that, but a plan had been successfully devised whereby every crop of sufficient value to pay the cost, could be insured not only against frost, but against a downright freeze as well. Never again will the press dispatches announce a loss of seventy-five million dollars in crops in a single night. The compaign in the Grand Valley this year, hard as it may have been, has amply demonstrated this economic fact.

Here and there you will find a doubting critic who not only derides the use of the orchard heater, but who declares emphatically that this particular section of the country is immune from frosts.

Similar claims were made in the Grand Valley. It was because of the fear of the orange growers of California that the outside public might learn of a possibility of damage from frost, that they refused to experiment with smudge pots. That same mistaken idea prevailed in the Grand Valley for many years. Here it was claimed was the Garden of Eden, where conditions were always ideal, where the frost bugaboo was never feared. But all the same, the serpent was there. The truth of the matter is that, although for an uninterrupted period of a dozen years but little trouble was experienced from frost—although now and then it was admitted that frost had damaged some particular section—when frost damage was unusually severe, the optimistic ranchers insisted that the heavy crop of the year before was responsible for the light crop, but never the frost.

And it may be stated without fear of contradiction that similar conditions prevail in every fruit section of the United States. This year demonstrated that not even California or Florida is safe from frost. The Grand Valley ranchers had the foresight to realize this condition first, and now from the flood of queries coming in, by next year there will be no more claims put forth that frost is unknown in this and that section.

In the Grand Valley there are rarely more than one or two nights in which the fruit buds are in danger from frost, and generally no heating at all is necessary. But the cost of this insurance protection for years to come will be more than repaid by the increased prices which will be obtained for fruit, due to the fact that other fruit countries failed to follow the example of Mesa county.

The results of orchard heating a year ago in the valley were such that the orchardists of the country might possibly be excused for not preparing to heat their orchards, as the experiments were not entirely successful. In fact, after the frosts of last year there were many orchards in the Grand Valley which had been heated, but produced no more fruit than those left unprotected. Consequently many of the ranchers were skeptical. I talked with many men who insisted that they had kept care-

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NEW PROCESS MFG. CO., SALINA, KAN.

Owens Valley Land
See Announcement on Page 139

ful count of expense and results, and were positive that the excess fruit on the heated sections of the orchard would not pay the expense of the heating. Last year the mercury fell to 22 above zero in sections of the valley, and then for only a few minutes.

Aside from the practical demonstration of the success of heating, even with the temperature 15 degrees below freezing for a long continued period, the experience of 1910 will teach a number of important lessons for the future success of the fruit industry of the nation.

Most important is the lesson that orchard heating is a man's work and not child's play. The game cannot be played in a haphazard fashion. To win the fight with frost, the rancher must be always on the ground watching his thermometers in and out of his orchard and ready at all times to give battle to Jack Frost with added coal and oil.

Some of the ranchers who heated their orchards this season lost their crop. But it will be found, as a general thing, that they did so because of some defect in themselves, not in the principle of orchard heating. Many of them had insufficiently equipped their orchards with heaters. They had failed to follow the advice of the experts, who, from previous experience, had recommended a certain number of pots to the acre. Others lacked fuel, and still others lacked help. Insufficient equipment was responsible for the greatest losses. This was coupled with lack of system. Some of the ranchers started the pots going and then retired. They had no crops when they were awakened in the morning, even though the pots were still burning. Failure to systematize the work left many of the pots unlighted. The rancher and his assistants failed to find them in the dense smoke pouring from the heaters which had been lighted.

One of the largest growers, W. B. Cross, who has a 240-acre orchard, a large part of it in bearing, is planning to organize a fire-starting department, on the same principle that cities now use in extinguishing fires. Mr. Cross plans to get a crew of twelve men and organize them long before the danger season opens. They will be given regular drills, each man will have been assigned a part —lighting, refilling, or watching the thermometers, and when the alarm is sounded each man will know his particular duty. Mr. Cross is a user of oil pots. For the ranchers who heat with coal, system is even more important. Refilling of coal pots is a laborious task and requires time, and unless the rancher is prepared to do this with sufficient help, he will find himself with smouldering fires at the most critical period of the night.

There is still much difference of opinion as to whether the coal or oil heaters are best for orchard protection. It is undoubtedly true that both proved successful and saved a large per cent of crops when the mercury fell 15 degrees below freezing. But you will find oil advocates who insist that the coal men did not save their crops, and you will also find advocates of coal who declare that the oil-burners cooked the blossoms on their trees. These are questions still open for discussion. The vital principle in which the orchardists are interested is whether the heating will save a crop, and the truth of this has been amply demonstrated. In the freeze of April 16th, the blossoms were in their most delicate stage, and the test of the orchard-heating theory could not possibily have been more severe.

Many of the ranchers permitted the mercury to get too low before they lighted their fires, or else were not provided with accurate thermometers, both in and outside the orchards. Thus, when the mercury began dropping outside the orchard, they had no means of knowing the exact conditions and lighted only an insufficient number of pots. It was also proven that it is exceedingly difficult to increase the temperature quickly and to any great degree, when it is growing steadily colder. It is claimed for many of the heaters that they will raise the temperature 10 to 15 degrees. This is undoubtedly true. But when it is freezing and the mercury is on a downward slide, the man who waits too long cannot expect to save his crop. The orchardist will find it much less difficult to maintain a safe temperature among his trees than to force up the mercury by artificial heating when every minute is thinning out the buds and blossoms. Thirty degrees is generally considered to be the stage at which the cold begins to nip the buds, and it is well to start the pots going when the mercury touches that figure. Some growers did not wait that long, but lighted up when 32 degrees was reached.

Where the weather bureau co-operates with the citizens, as was done in the Grand Valley, and as will be done in any section of the country upon request to the government, the fruit growers have plenty of advance notice to know what to expect during the course of a night. While predictions of frost are sometimes made which fail to materialize, the wise rancher will be prepared for danger upon receipt of the warning. One thing is certain: The forecaster has never misled the farmers by telling them there was no danger of frost, causing them to be frozen out because of it.

The success attained in the Grand Valley this year by the use of orchard heaters has caused an unprecedented demand for heaters all over the United States due, no doubt, to the general losses by frost over the country. The heaters had been pretty well scattered this season through different states by manufacturers, and success was reported in every instance. The principle of orchard heating can also be applied to low-growing crops, such as strawberries, grapes, etc., the only limit to the use of the pot is the matter of cost. In the orchards of the Grand Valley, where returns from the crops are from $200 an acre up, considered as insurance, the expense of frost protection is small. This year, for instance, the increased price which will be received for what fruit is produced will pay the cost of the insurance several times over.—Louis Meyer, in St. Jo. Fruit Grower.

LIME IN BORDEAUX.

Air-slaked lime cannot be used for the Bordeaux mixture, especially if it has been long air-slaked. Get fresh lime and slake it and keep it under water. When you want to use it, take three times as much of the lime paste as you would of dry quick lime. You can use hydrated lime all right for making Bordeaux.

By self-boiled lime-sulphur wash we mean a preparation that is boiled only by the heat from the slaking of the lime. It is best to put eight pounds of quick lime and eight pounds of sulphur together in a barrel with about enough water to cover it. We do not recommend it in place of the Bordeaux, as it has not yet been proven that it will be any better, nor even as good. Further experiments will give us the answer in this direction.

There will be no harm in using more than four pounds of lime in the Bordeaux mixture, although it is not necessary to use more than four or five pounds of good fresh lime for each three pounds of bluestone. The only objection to using more lime would be, that it stains the foliage or plants that are to be kept for ornamental purposes, as, for example, shrubbery in the dooryard, and it also stains fruits if put on near their time of ripening.—Coleman's Rural.

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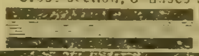

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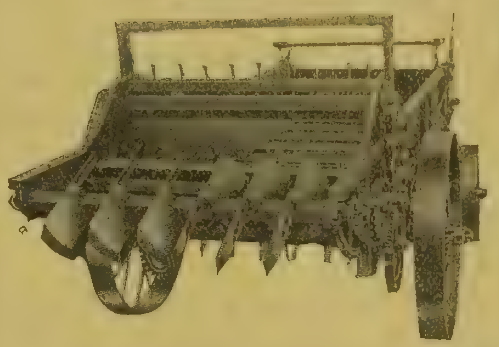

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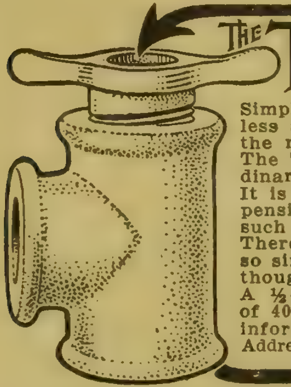

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Live Stock and Dairy

Dairymen and stockmen are requested to write of their experience. Mrs. Sherman is always willing to answer queries and this, with experience of other workers, will make this department of greater value.

SORGHUM POISONING.

As there have been frequent inquiries as to effect of feeding sorghum to stock, especially as to chances of poisoning, we make a number of quotations from authorities on the subject. We have never heard of a case of poisoning from this cause in California, but as the question continually comes up, it is worth touching upon. Any of our subscribers who have definite information as to serious results from sorghum feeding will benefit many interested readers by describing the trouble and results. There seems to be no doubt but that ill effects and even death have occurred from this cause, especially in sections subject to early frost. The same results have been reported from the feeding of corn stalks of which thousands of tons are fed in this country every year, but not so often as from feeding of sorghum. The first quotation we make is from "Feeds and Feeding" by W. A. Henry of Wisconsin.

Dangers from Second-Growth Sorghum

The agricultural press reports cattle dying suddenly after eating very small quantities of second-growth sorghum. Coburn quotes Pritchard, the Kansas state veterinarian, as saying: "Second-growth sorghum under certain conditions is very destructive to cattle, small quantities killing them almost instantly. Just what this destructive agent is I am unable to say." In the same report reference is made to Kaffir corn causing the same trouble. Tracy reports that the second-growth "chicken corn," a variety of sorghum found in the Gulf states, when eaten by cattle, sometimes produces fatal results within a few minutes. He says: "It seems to affect only certain animals, or perhaps only certain plants produce the ill effects, as generally only a few animals in a herd are killed, and these are commonly found near together." No one knows why second-growth sorghum should cause trouble in the way noted, and no remedy is known. Prevention is the only means at hand.—Feeds and Feeding, Henry.

From Bailey's Cyclopedia of Agriculture.

Sorghum, and particularly second-growth sorghum, may contain, under conditions that are not entirely understood, sufficient prussic acid to kill cattle quickly when they pasture on it. The animals usually die so quickly that little can be done. If possible, give as a drench, sixty to eighty grains of permanganate of potash dissolved in a quart of water.

Care must be exercised in feeding the young growth, as it has been found that prussic acid develops when the growth is checked. Under certain conditions, young growths of all sorghums may be poisonous. Frost and extreme drougth are supposed to develop the poison by checking the growth, resulting in the action of an enzyme on a glucoside normally present in the plant.

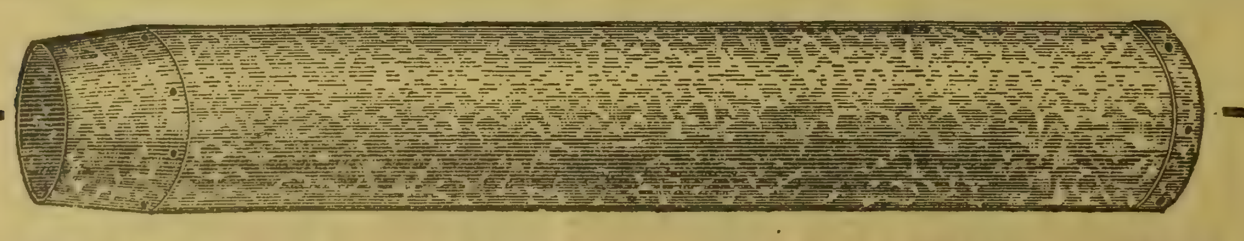
* * *

Sorghum makes excellent pasture for hogs, but in many sections it must be pastured sparingly, if at all, by sheep and cattle. After periods of extreme drouth, or when growth is stunted from other causes, the leaves of the sorghums often contain a large amount of prussic acid. A small quantity of this poison is fatal to stock, and death frequently results soon after the sorghum is eaten. Normal growth seldom contains prussic acid in appreciable quantities, and it largely disappears in curing, so that cured sorghum may be fed with little danger. There is also some danger from bloating; cattle and sheep should not be turned on sorghum pasture when hungry or when the plants are wet. With the exercise of care, however, the crop can usually be pastured with safety. It should be at least two feet high before stock are turned on it; for cattle, sheep and horses it may be much more mature than for hogs.—Bailey.

EDUCATIONAL BUTTER SCORING CONTEST.

In spite of the fact that this is perhaps the most discouraging part of the year for buttermakers, twenty-one entries were sent in. It is encouraging to note the interest which is being taken in the work, for letters from some of the contestants indicate that they knew conditions were greatly against them. In most cases, the low scores cannot be charged entirely to the buttermakers, as it appears from the method blanks that they have used greatest care in the manufacturing process. The large number of entries showing the effect of the season,—overripe, and poorly cared for cream—makes the importance of receiving good cream very evident, and all buttermakers will do well to strive along this line. There is nothing more discouraging than to have to work with old stale cream, as the high acidity when received, makes any control of the ripening process impossible, and, the use of starter cannot overcome the undesirable flavor which is bound to be present in the butter. So, upon the farmers must be urged the necessity of better care of cream, for the standard of California butter can never be raised until this condition is overcome.

The scores placed were as follows:



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Golden Creamery, Etna Mills	95
Laton Co-operative Cry, Laton	94½
Pioneer Creamery, Ferndale	94
Ceres Creamery Co., Ceres	94
Bodega Creamery Co., Bodega	93½
University Farm Creamery (Not competing)	93½
Fresno Creamery Co., Fresno	93
Castroville Creamery Co., Castroville	92½
New Era Creamery, Gustine	92½
Elk Grove Creamery, Elk Grove	92
Suisun Creamery Co., Suisun	91
Eclipse Creamery Co., Beatrice	91
Diamond Creamery Co., Harmony Valley	91
Bay View Creamery, Napa	91
Woodland Creamery, Woodland	91
Turlock Creamery, Turlock	90¼

Others competing ran as low as 87 per cent.

The butter receiving the highest score was made from grade cream, one day old. After 10 per cent starter was added, it was held at 58 degrees for three hours. One hour before churning, it was cooled to 50 degrees, the churning temperature. The time of churning was 45 minutes, and there was one washing, at the same temperature as the buttermilk, 54 degrees. The result was butter of a fine clean flavor, and having good body and texture.

In comparison with the last entry, there were very few pieces containing mottles. It is pleasing to note this improvement, as at least 40 per cent of the third entry showed mottles or streaks. Mottles are mechanical defects and can be prevented by proper washing and working.—Leon M. Davis.

DAIRY INSTRUCTION.

The Department of Dairy Industry of the University Farm at Davis informs us that the short courses in dairying will begin at Davis, October 3rd and will continue until November 22nd. Effort has been made to present a course which will surpass in quality and thoroughness any so far given. These short courses have been very popular with the creamerymen and dairymen who have not been able to absent themselves from their activities. It gives them an opportunity at least once a year to mix with others of their profession and at comparatively small cost get most practical dairy and creamery instruction. There are two short courses to be given; one on Dairy Manufactures beginning on October 3rd and extending to November 22nd, and another on Market Milk and Cream Supply beginning October 17th and extending only to the 29th. Regarding the Dairy Manufactures course Mr. Hopper writes:

"This course for butter and cheese makers deals with the nature and qualities of milk or cream and the actual making of butter and cheese. It includes the secretion, composition and handling of milk; fermentations in milk and their control; testing, running separators, ripening, starters, pasteurization, churning, moisture control, dairy bacteriology, steam engines, boilers, motors, pumps, etc. In addition to the above, cheese-making includes the treatment of the milk and all the steps taken in making both cheddar and California cheese, together with curing, storing, etc. Important features of the course are the creamery accounting and lectures upon the breeding, care and improvement of dairy herds and practice in judging.

"The school is equipped with a full line of modern machinery and apparatus to properly execute all phases of the work."

The Market Milk and Cream Supply Course is designed for creamery patrons, dairymen, dealers, etc., covers in two weeks the essentials in methods of producing and handling milk or cream for creamery purposes, or for direct consumption. There will be lectures on the breeding, care, and improvement of dairy cattle, testing milk and cream for butter-fat, acidity, adulteration, etc. There will be practice with hand separators; also bottling, standardizing, pasteurizing, etc.

Dining Hall, University Farm, Davis.

The cost of the Manufactures Course is $10.00 to $15.00; for the Milk and Cream Supply Course, $2.00: books not to exceed $5.00. Board and rooms may be had on the Farm.

DOES SHE PAY?

Dairyman! Are you sure that each cow in your herd pays you a profit? If you do not know this, by actually weighing each animal's product through at least one lactation period and keeping careful records of her feed, Bulletin No. 322 of the Station at Geneva, N. Y., has a lesson for you.

Class in Cheese Making at Work.

In the good herd of the Station, the result of careful breeding and selection for years, great differences were found between individual cows. The best cow of the herd, who held her place for four years, gave three times as much milk as the poorest cow in each of three seasons; and it cost only one-tenth more to feed the good cow than to feed each poor one. Similar, or worse, conditions exist in many herds in the state. Even the poorest cow in this herd probably paid for her feed; for she produced butter fat at from 25 to 33 cents a pound; but the Station has records of herds in the state that average only 80 pounds of butter fat per cow, bringing in a gross return of $26 a head. How much it cost to feed those herds probably no one knows, but the least the Station could carry any cow through a year on, for feed alone, was $47.50. If these poor herds gave an average of only $26 worth of product in a year, $20 less than it cost the Station to keep its lightest-cost cow, how much did the poor cows of those herds lose their owners? Any cow-keeper will be interested in this bulletin, for it gives very accurate data for production and food cost of that production, of 19 cows yearly for three years.

The Station herd consists of Jerseys and Jersey grades, and has been built up at small cost, just as any farmer could build up his own herd, until it averages more than 6000 pounds yearly per cow, of 5½ per cent milk.

SELECTING THE BOAR.

Whenever possible the breeder ought to inspect personally the animal he selects as a herd boar, but when unable to do this and he has no competent representative, he should endeavor to make the best selection possible by mail by detailing his needs, and the deficiencies of his sows. Ordering by mail should be considered a last resort, to be done only when the purchaser cannot buy near home, or for other good reasons is unable to give his personal attention to the selection. When that is the case the purchase should be made from a breeder known to be reputable and the needs of the buyer and the price he figures on paying should be definitely stated in the letter as the attitude of one who expects the best possible for his outlay. All men who have had much to do with the selling of pure-bred boars are familiar with the buyer who insists that "you must get him down as low as you can —he must be cheap, as I have written to a number of other breeders." A man of this stamp is likely to want a boar of almost impossible make-up for a very small sum. He is less likely to do well in his purchase than the man who will frankly state the type of boar he needs and the amount of money he can afford or intends to invest. The chances are, too, that the latter procedure will bring much the better treatment.—From Coburn's Swine in America.

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A horse's hoof is from 60 to 70 per cent water. Grease and water will not mix. There is no grease about Wool Fat. It mixes readily with water, is very penetrating, and while a great medicine of itself, it also acts as a vehicle to carry to the afflicted parts the other medicinal properties of the HEALER. It is absorbed into the skin and gives natural stimulation and nourishment to the hoof. There is nothing that can compare with it for this purpose, nor as a remedy for contracted hoofs, split hoofs, quarter cracks, mud fever, corns, grease heels, and for all kinds of sores and cuts anywhere on any stock. If you have tried it, you know that this is true. If you have never tried it, it will surprise you with its power as a healer and restorer. It is not a new remedy, but has been on the market in the East for many years, where it has given the greatest satisfaction.

4 oz. package, 25c; 12 oz., 50c; 32 oz., $1.00; 5 lb. pail, $2.00; 10 lb. pail, $3.50. It is easy of application. Directions with each package.

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THE OLD GARDEN.

I know of a haunted garden where the old-time flowers grow;
There are hollyhocks and lilies in a long and stately row;
There are lilac trees by the gateway, and roses white and red,
And the southern wood's spicy fragrance follows the careless tread,
A memory-haunted garden, out of life's busy way,
Where the smell of vanished summers lingers the livelong day.

The hands that planted these flowers have mouldered back to dust.
But their hearts are true and steadfast and they seem to hold in trust
The memories of the old-time, and those whom men forget;
Perhaps for the lilac and the lily the dead are living yet.
Those whom our eyes can see not may tend them still—who knows
Of the strange sweet secrets hidden in the red heart of the rose?

Does grandmother come to gather its pinks and pansies still
From the grave which kind hands made her in the churchyard on the hill?
Does she know when the lilacs blossom that she planted long ago?
The question must go unanswered, but I fancy it may be so:
And so from the dear old garden not a flower I take away,
But leave them all to be gathered by the hands that are dust today.

—The National Magazine.

LAYERING.

LAYERING is the multiplication of plants from the decumbent shoots and runners that naturally come in contact with the soil, taking root at the nodes or joints, or from upright branches that are bent down to the ground and covered with the soil. Layering is one of the simplest and easiest methods of propagation, as the parent nurses the layer plants until they can sustain themselves. It is a reliable and ready means of reproducing many hard-wooded plants that do not readily strike root from cuttings. The black raspberry and dewberry are familiar examples of plants propagating from natural layers. The tips of the branches strike the ground first, and if the soil is loose and mellow, they take root readily. The parent branch is cut off some 4 to 6 inches above the ground and a separate plant known as a "root tip" is secured. The short portion of the old branch serves as a handle in carrying the plant. In most cases of layering the branches must be bent down and covered with soil. This covering may be continuous for a considerable distance along the stem, or only the joints may be covered. The covering should be shallow, not more than 2 to 5 inches deep. If more than one plant is secured from a shoot, they will usually lack in uniformity and vigor. Hard-wooded plants often do not strike readily from layers, and in order to induce their formation the branch is twisted, girdled, or split at the point where it is desired that roots shall form. In commercial propagation the parent plants are often cut back to the ground in order to secure many shoots fit for layering. In the gooseberry, quince, and paradise apple, the new shoots are not bent down to the ground, but the soil is heaped up around their base in the shape of a mound. These shoots send out roots near this base, producing straight, stocky plants, which may be set out into their permanent location after one year in the mound, or they may be taken off and grown another year in the nursery row.

The pot or aerial layering is confined almost entirely to the greenhouse, where moisture and heat can be kept uniform. The stem is usually split or girdled at the point where roots are desired, and surrounded by moss or soil to retain the moisture. The roots start from the injured parts, and when they fill the material placed around the stem, the branch is cut just below the layer and treated as a separate plant. The common house rubber-plant is largely propagated in this manner.—Ohio Ag. Bulletin.

TIME OF PRUNING ORNAMENTALS.

The time of pruning is so dependent upon the kind of pruning that it cannot be considered wholly by itself. The cutting away of dead wood and interfering branches may be done at any season, though without doubt the best time is late winter or early spring. Then the plant is without foliage and it is easy to see just what needs to be done. Soon growth will begin and the wounds start to heal. This, too, is the season in which to make such removals of the older wood as will tend to renew the plant and to assist it to maintain its form and prolong its life. The cutting back of rampant growths and straggling shoots should be done when the need is evident, regardless of season.

For the shortening in of the flowering wood there are two general seasons, dependent upon the character of the plants,—late winter or early spring and summer. Those shrubs whose flowers are borne on the ends or the sides of the shoots of the previous season, should not be cut back in winter, else there will be a total loss of bloom. Such shrubs should be cut in immediately after the flowering season is over. This will encourage the growth of new shoots from the buds near the base of the branch, and these will grow rapidly to take the place of the part that has been removed and cover themselves with flower buds for another year. Those which bloom in late summer or autumn from buds produced on shoots of the current season's growth, should be pruned in late winter or early spring, so as to encourage abundant summer growth and buds.—The St. Jo. Fruit Grower.

The Chinese sacred lily is a narcissus, and is similar in character to all other kinds, flowering but once from the same bulb The old bulb simply supports the young bulbs which it makes, and in a year or two when strong enough, these young bulbs flower, then they are done with blooming. As soon as a bulb has done flowering and the tops die back, the young bulblets should be taken off and set in good soil to grow on for a year or two, by which time they should be strong enough to flower.

Small Fruits and Vegetables

THE PRODUCTION OF VEGETABLE SEEDS.

THERE is profit in raising high grade seed. Seed crops of sweet corn, garden peas, and beans of good quality are in ever-increasing demand, and the quantity needed yearly has become so large that the seedman is obliged to have the major portion of his stock grown for him by others. Within the past few years there has been an enormous increase in the quantity of seeds produced for commercial purposes. This has been due in large measure to the development of seed growing and handling as a business. There are now nearly one thousand seed firms doing business in the United States. One of the largest of these uses buildings with an aggregate floor space of more than 16 acres. This space is much larger than was occupied by the entire seed trade of the country only fifty years ago. The quality also has vastly improved. One of the most encouraging developments in the growing of garden vegetables is the increasing recognition of the practical importance of using pure and uniform stocks of seed whose varietal characteristics adapt them to distinct local conditions and market requirements. Another consideration is the fact that the growing of seed crops of these vegetables can be undertaken without any radical change in farm practice or material increase in farm equipment. These conditions make this industry well worth the attention of farmers who are located where soil and climatic conditions are favorable for the best development of such seeds.

However, the raising of these vegetables for seed crops is not recommended for all circumstances, even when soil and climate are suitable. The farmer who contemplates undertaking seed crop farming, will do well to consider thoroughly the many elements which enter into profits. Seedsmen are often able to place contracts for growing seed at very low prices—even lower than that at which grain of the species can be sold on the market. Such a condition might be due to any of several causes, but usually rests on an over supply or a demand for an inferior product. The general tendency now however, is decidedly in the other direction, and both seed dealers and seed growers can do much by co-operation to further this tendency. The dealer should not buy by sample, no matter how good the samples may be, but should endeavor to limit his supply to seed which he knows was grown from pure and true stock seed, and, as far as possible, to that which was subject while growing to his own inspection. Knowledge, experience, and care, on the part of the grower will, also contribute much to a higher standard, and consequently to higher prices and better market conditions generally.

In response to a demand for greater knowledge of the cultural methods which are best adapted to seed crop growing for the vegetables mentioned, the U. S. Department of Agriculture has just issued a new publication, Bulletin 184 of the Bureau of Plant Industry, under the title "The Production of Vegetable Seeds: Sweet Corn, Garden Peas, and Beans." This publication discusses this whole subject very thoroughly and gives instructions for securing crops of seeds for these different species.

THE GLOBE ARTICHOKE.

The globe artichoke of the garden is a hardy perennial, and in a warm climate, an evergreen, growing from three to four feet high, with numerous branches. In rich soil the leaves will measure three to four feet in length, cut in deep, horizontal, convex segments, which are covered with an ash-colored down, the whole plant resembling a large thistle. The portion eaten is the under side of the head, before the flower opens. The whole head is removed and boiled, the leaves laid aside, the bottom eaten, dipped in butter with a little pepper and salt. It is sometimes eaten raw as a salad.

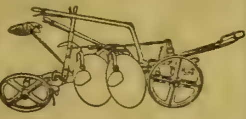
Sometimes the young suckers are tied together and blanched and served in the same manner as asparagus. Plants thrive best in deep, rich, loamy soil, although they occasionally grow in adobe soil of the very meanest gumbo type.

This plant is supposed to be a native of south of Europe. The first account of its civilization was in Italy in 1473, and from that period, when it was said to be very scarce, it has steadily grown in favor and its cultivation extended. There is a well defined impression among Eastern gardeners that a soil containing a large proportion of saline properties suits it best. Whether it would flourish in arid desert climate I do not know, but it has always been successfully grown near the sea.

In two or three years the plant may get too large and should be divided into two or four pieces to the hill. This should be done here any time from December to the last of January. Artichokes are not always satisfactory when grown from seed, owing to the numerous and undesirable types thus produced. One can secure a good stand by discarding the poor types and dividing the plants of the finer kinds and replacing the poor ones; but it takes time to do this. One ounce of artichoke seed will produce about 500 plants.—Rural World.

ANTHRACNOSE OF THE BLACKBERRY.

Anthracnose, a disease of the blackberry which has become well known among blackberry growers of the Northwest, is one of the numerous fungous diseases. The fungus attacks the leaves and stems of the blackberry early in the spring. Later, when the fruit forms, it is infested, and where the disease is abundant, considerable loss is caused, since the fruit dries up, becoming practically tasteless with little value as a food. It has been found that spraying twice with Bordeaux mixture before the fruit begins to ripen will reduce the disease enough to warrant spraying to control it. A spraying of single strength Bordeaux mixture gives splendid results. The exact time for spraying is not easily determined, but good results have been obtained where the first spraying was given about the time the plants bloom, and again when the fruit was grown to the size of garden peas.—Spokesman Review.



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Simple Economical
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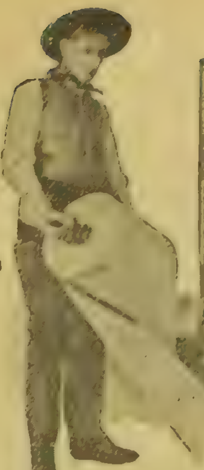

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California Cultivator

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A Great Convenience.

Touring in the old home land, Mr. Edward Berwick writes the Cultivator from Edinburg, Scotland. He refers to one instance which may not be strictly agricultural, but indicates a condition which we hope will prevail in this country in the next few years to the great convenience and financial advantage of agriculturists. The incident has to do simply with Mr. Berwick's laundry. Not being delivered in time by the Liverpool laundryman it was sent from Liverpool to Bettws-y-Coed, Wales by English parcels post and cost fifteen cents. Mr. Berwick does not give its exact weight, but states that it was a large box.

Americans do not want this convenience, at least many of them have been influenced by the sophistries of the express companies to think they do not want it. Consequently they are not demanding it of Congress. On the other hand, the express companies are demanding and with the most extreme emphasis, that their business shall not be interfered with. For service such as Mr. Berwick paid fifteen cents, an American would be compelled to pay to the express companies several times that.

It is time this country waked up and demanded what every other country on the face of the civilized earth has. With the ever continued loss in the Post Office Department, it would seem that business intelligence would demand enlarging its scope so that it may become self supporting. Almost every other country has a self supporting Post Office department, and as noted, has a parcels post, but here the "interests" have such a hold upon legislation that it is impossible to secure these conveniences.

A Stitch in Time.

We have a letter from the veteran fruit grower at Riverside, Mr. J. H. Reed, in which he expresses appreciation of some of the good things in recent Cultivators. Particularly does he refer to Mrs. Sherman's work and to Dr. Thorpe's talk on fertilizers. Referring to that article, he says: "It has one feature which I think you may well encourage in other contributors; he tells definitely what he does himself, and how much. Such information from a known successful farmer sticks. General theoretical statements may be wise, but quickly evaporate."

Principally Mr. Reed writes of his interest in the number recently given over so largely to frost protection and suggests that agitation along this line should continue. Everything should be done in preparation for possible cold this season. "It is most discreditable to us that such tremendous wastage as occurred last winter should be allowed when means of avoiding it have been so definitely demonstrated." "Let the Cultivator arouse interest in even a few neighborhoods that will lead to timely co-operative preparation, and it will do a real and, in fact, a great service." Mr. Reed refers to the extensive work already being done by the Arlington Heights Fruit Co., stating that this great property has already "accumulated a very mountain of material for next winter's use." "Interests like those controlling the Arlington Heights properties seem to be quick to appreciate the necessity for advanced preparation. It is the five and ten acre grower who will not prepare and whose fruit will be a great factor in affecting prices next spring if it is injured by another cold season."

Preparation.

We note in an article on frost protection work in Colorado that fruit growers, and especially promoters handling lands adapted to fruit growing, protested for years against preparation for frost protection because of the fear of results if it were admitted that there was possibility of frost in that particular section. The article refers to a similar feeling in California and to the fact that this fear has caused the loss of millions to the fruit growing interests. We do not need to go to an Eastern paper for information that this is the case, but it furnishes additional proof of a statement made in a recent Cultivator along similar lines.

We are all exceptionally sensitive on the subject of our own community. This is most admirable and contrary to the spirit in some sections of the East. This feeling impels us to locate frost, disagreeable winds, and other undesirable features, just over the line in the next colony; our own community, of course, being perfect. This is proper enough perhaps for foreign consumption, but when a fruit grower has a valuable product on his trees which a little forethought in preparation will save, he should not hesitate to admit possible danger.

It is yet early to consider the frost question, but none too early to be fully prepared.

Be Informed.

Mr. J. W. McKay of Saticoy, writing to the Cultivator for information in the matter of planting and growing of apricot trees and particularly the curing of the fruit, suggests that the industry is of sufficient magnitude in this state to warrant much attention being given to it. Mr. McKay hopes for the getting together of apricot men. They should co-operate in the marketing of their fruit, and especially in securing information from each other as to output. He mentions an instance of a neighbor who through lack of information sold exceptionally nice fruit for a price far below market quotations at this time. This sale will help the dealer to hold down prices to the better informed grower who realizes the shortness of the crop and is demanding all he is entitled to. "I do hope in the near future that we growers may come closer together in a business way in selling our fruit. A dealer approaches me and offers me ten cents. He then goes to a man not so well posted and buys for less than nine. The trouble is the farmer is often too honest and takes it for granted that others will be honest with him."

What apricot growers need is an organization along the lines of the California Fruit Growers Exchange where a thoroughly competent business man devotes his entire time to posting himself on market conditions; while he is as honest as the most honest farmer he has information that prevents the unscrupulous buyer from pulling the wool over his eyes. When they can find the right man to do this work, then the orchardists should give their entire time to production, but until that can be done they must not only be producers but "middlemen" as well or they will receive unsatisfactory returns for their labors. It is to be hoped that the organization now formed in Orange county will result in success.

No Sulphur Decision.

Occasionally we receive an inquiry as to the situation in the Referee Board to which the Wiley decision on fruit sulphuring was referred, and we can only answer that the matter has not been formally decided. The board is made up of exceptionally careful investigators and the presumption is that in the preparation of their report they are waiting to be absolutely certain of their statements. There is little cause to fear that the decision will be adverse to the fruit interests. It is now thought it will be many months before the report will be given to the public.

Farmers Institutes.

The following dates have been made by J. B. Neff, conductor of farmers institutes for Southern California: Riverdale, Kern county, September 1 and 2; Delano, September 3; Wasco, September 5; Farmers Hall twelve miles southwest of Bakersfield, September 6. Mr. Neff has just returned from Kern county from arranging the details of these institutes, and local workers will now take up the work of preparing at the local end.

County Statistician.

We note the appointment of Mr. Geo. Robertson as county statistician of Fresno county. Mr. Robertson has a genius for figures and for many years has furnished not only interesting, but valuable statistics as to productions of the San Joaquin Valley. Such work does not show its full value on its face and does not always bring immediate returns. It is like the trial balance in business, of immense value in showing whether the industry is progressing or otherwise.

The Crop Reporting Board of the Bureau of Statistics reports on August 2nd that the condition of the cotton crop was 75.5 per cent of normal; compared with last year it is 5 per cent lower, though it has improved since the early June report. It is, however, 4 per cent below the average for the past ten years. It is encouraging to note that California tops the list, as the condition of its cotton is 98 per cent of normal while several of the Southern states report a condition as low as 69 and 70 per cent.

Agricultural News Notes of the Pacific Coast

Northern California

Oroville is calling for a creamery.

Biggs, Butte county, has a big prune crop.

An icing plant is being constructed at Portola, San Mateo county.

Some barley at Butte City, Glenn county, is running 25 sacks to the acre.

The cannery at Marysville began canning on peaches earlier than usual.

Thermalito, Butte county, is gathering its almond crop which will be immense.

The cannery at Santa Rosa, Sonoma county, is embarrassed from want of help.

Apple growers of Santa Rosa county are giving second spraying for codling moth.

Harvesting of beets for the Hamilton plant of the Sacramento Sugar Company, began last week.

One pear orchard at Red Bluff, Tehama county, will furnish this year about 30,000 boxes of fruit.

Two square miles of grain fields of Colusa county was burned last week near Sycamore. Loss was $50,000.

The state game farm near Haywards is sending pheasants and other game birds to various parts of the state.

Steps are being taken for the formation of an organization of deciduous fruit growers at Oroville, Butte county.

The canning plants of the California Fruit Canners Association at Yuba City and Chico will not operate this season.

A turkey raiser at Gridley, Butte county, has just transferred 600 turkeys several miles in order to secure better pasture.

The California Fruit Distributors have shipped over 3,000 cars, which is more than 300 in excess of last year at same date.

The Ehmann Olive Co. is enlarging and refitting its plant at Oroville, Butte county, and will have the largest establishment of the kind in the world.

Fig culture will be further encouraged in Butte county, one concern, the California Fig and Orchard Company, having purchased 2,000 acres to be devoted to fig culture.

The management of the Solano-Yolo Land and Water Company is securing signatures to contracts to supply water to the section between Vacaville and Elmira, Winters and Dixon.

Little Contra Costa county proposes to put some of the bigger counties of the state to shame by bonding the county for $1,400,000 for good roads. The plans call for 125 miles of roads.

President Taft has changed the boundary lines of Plumas and Tahoe Forests, adding 125,761 acres to Tahoe and transferring 19,485 acres from Tahoe to Plumas. The total acreage of Tahoe is now 1,279,815 while that of Plumas is 1,455,810.

Central California

Prunedale, Monterey county, is at its busiest because of hay baling.

A light grape crop is more than ever evident in the raisin sections.

The Turlock fruit growers association is shipping a car of fine peaches daily.

Contract has been let for another packing house at Sanger, Fresno county.

One car of melons shipped from Alta, Tulare county, averaged 31½ pounds.

There are twelve threshing machines now busy in the upper end of Salinas Valley.

The waters of the Kaweah river are a foot higher than formerly because of mountain rains.

Farmers in the Alta district, Tulare county, report excellent output of melons, also of potatoes.

The cantaloupe crop of Turlock, Stanislaus county, is not as large as last year, but quality is superior.

The Lindsay, Tulare county, Fruit Association has voted to add an $8,000 enlargement to its packing house.

The Tulare county board of trade has not only canned many exhibition fruits, but is now canning the flowers of century plants.

A stock grower of San Benito county, having a quantity of low-grade hay on hand, will feed to "stockers" and drive to market.

The entomological department at Berkeley is still receiving complaints of depredations of grasshoppers in various portions of the Valley.

The Fresno County Agricultural Fair management has determined upon a butter-fat contest in which $215.00 in premiums will be offered.

Engineers have submitted plans for weir in the Kings river to supply water to the People's Ditch Company which irrigates much Kings county land.

Hanford packing houses are busy erceiving dried peaches and apricots. The growers are generally demanding at least 4½ cents as minimum price for peaches.

The President has signed a proclamation eliminating 65,490 acres from the Sequoia National Forest, and has transferred 175,730 acres from the Sierra National Forest to the Sequoia.

An Irrigation District Association meeting was held in Turlock last week at which delegates were present from Turlock, Modesto, Alta, Oakdale, and South San Joaquin Irrigation Districts.

Horticultural Commissioner Rutherford of Stanislaus county has served notice on the Street Commissioner of Turlock to abate the nuisance of Russian thistle which is growing rampant in some streets.

Members of the fruit exchange at Lindsay have taken steps to withdraw from the Tulare County Fruit Exchange and inaugurate a new exchange of its own. This is not a withdrawal from affiliation with the California Fruit Growers Exchange.

Southern California

Several Valencia packing houses have closed for the season.

El Centro, Imperial county, complains bitterly because of the English sparrow.

Some enthusiastic orange growers estimate next season's output at 50,000 cars.

Mr. E. A. Palmer has been placed in charge of the Mecca Co-operative Date Garden.

Over 2,000 acres of sugar beets have been harvested around Oxnard, Ventura county.

Sixty carloads of grapes were shipped from the Imperial Valley. The season is now closed.

Imperial county which is now commissioned as District No. 45, will hold its annual fair this fall.

Survey is being made for a storm ditch to protect the orchards of Cucamonga, San Bernardino county.

Coachella, Riverside county, shipped 50 cars of cantaloupes, and its neighbor, Thermal, shipped 25.

Orange growers are sanguine of prospects for dollar rate on oranges the same as now prevails on lemons.

Corona ranchers are planning to put in a thousand acres of beets for 1911 delivery to the Anaheim factory.

The Anaheim Sugar Company has purchased a site for its plant north of the city, and will build a 600 ton factory.

Escondido has practically completed plans for her Agricultural Fair which will be held about the middle of September.

The Redlands Golden Orange Association will establish a branch house at Rialto and ship from it both oranges and lemons.

The Oxnard sugar factory turned out 10,215 bags of sugar as result of one day's run last week. This is the largest ever for that factory.

Orange county celery growers have nearly finished planting celery for this season. The acreage will be several hundred acres less than last year.

Not content with the decision of the Interstate Commerce Commission that the $1.15 rate on oranges is just, orange growers will make another effort for a lower rate.

The directors of the Walnut Growers Association at Santa Ana have appointed manager of the packing house for the coming season and are preparing for a big output.

County Horticultural Commissioner Pease of San Bernardino county reports that much poor contract work was done in the orchards of that county last season, also that an early start will be made with fumigation this season.

The Columbia Land and Water Co. of Covina is making extensive additions to its irrigating plant and will be equipped with irrigating facilities for 2,000 acres of Covina land. The officers elected at the recent annual meeting are: T. H. Johnson, President, J. H. Matthews, Secretary.

The Coast

Portland's Live Stock Show opens September 5th.

Wenatchee, Washington, is shipping fifteen cars of fruit daily.

Umatilla county, Oregon, expects to harvest 5,000,000 bushels of wheat.

Grain at Albion, Washington, is averaging thirty bushels per acre.

There are said to be 586,000 square miles of agricultural land in Alaska.

Vancouver, Washington, sheep herders report serious losses from sheep-killing dogs.

Over 100 combined harvesters are owned by farmers within a short distance of Pomeroy, Washington.

It is estimated that the entire wheat acreage of Umatilla, Oregon, will average 25 bushels to the acre.

Great numbers of box cars are on their way empty to Northwestern points to carry away the big wheat crop.

One firm recently bought several thousand tons of alfalfa hay in Umatilla county, Oregon, at $6.00 per ton in stack.

The recently constructed Parker Cut-off of the Santa Fe through Arizona has opened up a large quantity of agricultural land.

Though some injury was suffered from the heat wave, the apple orchards of Oregon report lighter damage than anticipated.

"Jim Hill" mustard in the grain fields of Waitsburg, Washington, has proved so destructive that a concerted attack is to be made on it.

A new irrigation plant at Tucson, Arizona, has brought 2,000 acres of land under irrigation, and is now well planted to beans and sorghum.

A farmer at Longmont, Colorado, has gathered 125 bushels of grasshoppers which he will dry and keep until next winter for chicken feed.

Farmers near Palouse, Washington, are selling timothy hay loose in the field at twenty dollars per ton. This is the highest ever for that section.

One sugar company near Honolulu, H. I., has harvested this year 56,865 tons of sugar. This is the record for any one company on the islands.

The Irrigation Congress to be held at Pueblo, Colorado, will bring together a number of exhibits from Indian reservations in the products of Indians' work.

Property owners near Yuma, Arizona, petitioned the War Department not to permit the Imperial Valley people to erect a temporary dam across the Colorado.

The Department of the Interior has revoked permission formerly given to a power company to flood a large tract of land within the Coeur d'Alene Indian Reservation.

Fruit growers of Idaho, Oregon and Washington, met in Seattle last week and organized the Northwestern Fruit Exchange, a co-operative organization to market the fruit of its members. Headquarters will be at Portland, Oregon. R. H. Parsons. Medford, Ore., is President and W. F. Gwin, Eaglepoint, Oregon, Manager.

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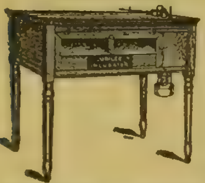

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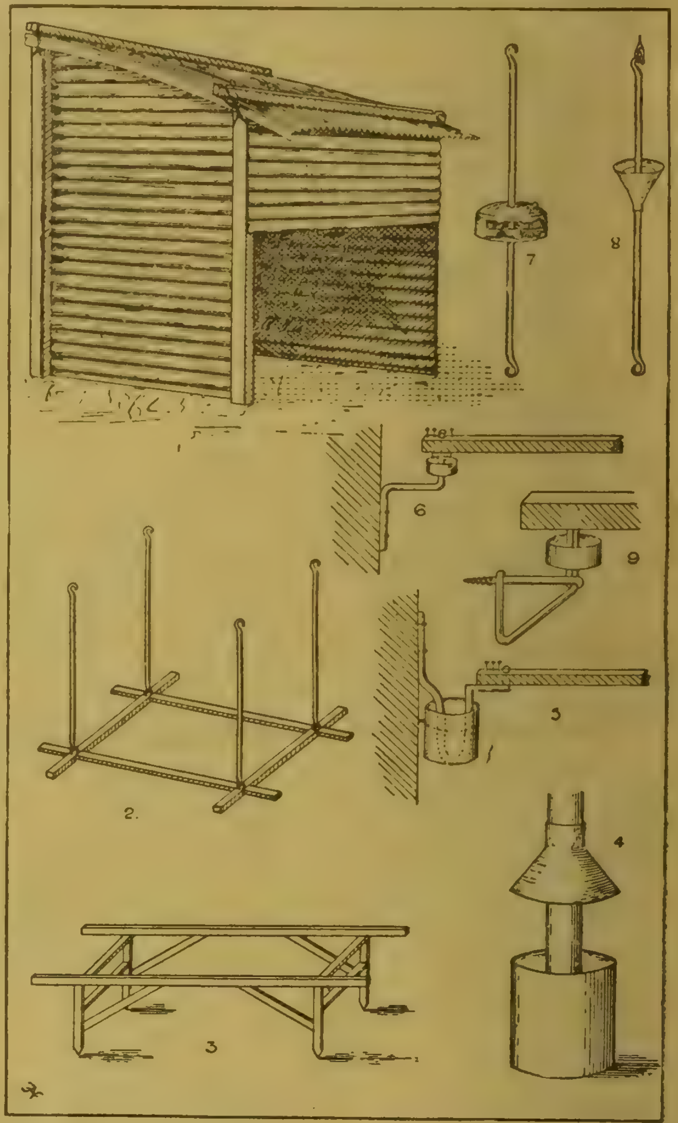
We solicit short articles of a practical nature from the fancier and utility breeder, giving their experience with poultry. All inquiries pertaining to feed, management, disease and its prevention will be answered through these columns.

THE FOWL TICK.

NUMEROUS queries have come to the Cultivator on the subject of fowl ticks. One subscriber recently sent lively specimens of the pest and the matter was referred to Prof. Baker of Claremont. He answered by referring us to a Bulletin of the Department of Agriculture of Cape Colony, South Africa. From this Bulletin we reprint engravings on this page and quote as follows:



1. Tick-proof fowl house with woodwork outside. 2. Level roosts to show how supported by rods or wires. 3. Level roosts supported from floor. 4. Suggestion for insulating leg of No. 3. 5 and 6. Method of insulating roosts by tick-proof wall brackets. 7 and 8. Insulation devices for rods and wires, in 7 which is dust-proof (figured with part of side cut away to show oil furrow), oil is poured in through aperture at top. 9. Tick-proof roost bracket

Life History.

The life cycle of the fowl tick has been found strikingly dissimilar in some important respects to the cycles of the several Ixodid ticks, the general habits being found much more like those of the beg bug than of any common tick.

The eggs are laid in the crevices where the creatures habitually secrete themselves. Some observers say that the eggs are sometimes laid on fowls, but not one of the numerous females I have watched has seen fit to trust an egg in such an unnatural situation.

The individual egg is spherical, shining brown, and about one-fortieth of an inch in diameter. The number laid varies; sometimes it is less than twenty, often over fifty, and occasionally over one hundred. The eggs adhere only slightly to one another. Cattle tick eggs are smaller, oval instead of round, adhesive to one another, and are deposited in vastly greater numbers. But Ixodid ticks die at once after egg laying, whereas, the fowl tick lives on, and may feed and deposit other batches of eggs several times subsequently. Egg-laying in warm weather normally begins about a week after feeding, and in about three weeks more the hatching begins.

Injuries.

The fowl tick is regarded by many as the most pernicious poultry pest that we have in South Africa. It is directly responsible for the death of numerous fowls, far more indeed than is generally suspected. It also seems to be the worst of poultry parasites in many parts of Australia and in the southern states of America.

Complaints of its ravages are most frequent in November and December. This is undoubtedly because in these months great numbers almost simultaneously take their first feed after their long winter fast, and because of the brood of young ticks that then appears.

Paralysis is commonly attributed to the attack of the ticks, but, I in-

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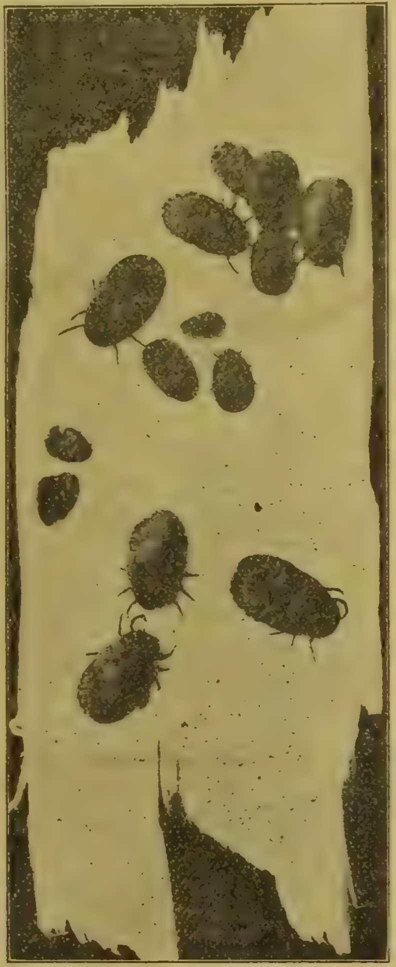
cline to the belief that the victims die entirely from the loss of blood and the inflammation produced by the excessive parasitism. Vast numbers of the creatures take their fill from the legs, and the after irritation and the soreness probably account for the inability to walk often noticed; and birds once lamed and thus made unable to mount the roosts at night become doubly troubled by the pest. Young chickens, being also easily accessible, suffer more than their share, and it is not uncommon to meet with a whole brood almost black from the presence of adhering larvae. The losses are most striking when a fowl house is first occupied after having stood empty for a few months. The hungry ticks swarm to the birds and may kill half or more of them before their presence is discovered.



Sliver torn from woodwork of a fowl house and photographed from behind to show how fowl ticks congregate in such a place; twice natural size.

Remedies.

From a consideration of the habits of the fowl tick, it is apparent that it may be combated in several ways: (1), by seeking them on the walls and roosts by night when they come out to feed; (2) by destroying them in their hiding places with a contact insecticide; (3) by destroying the larvae before they leave the fowls; (4) by so supporting the roosts that the tick cannot reach the fowls.

The first measure is open to the objections that the fowls will be disturbed and that, as only a small proportion of the creatures usually come ont on any single night, it must be continued a long time to be effective. The second, that of killing them in their hiding places, is a good plan, but one that cannot be thoroughly carried out in most fowl houses. A jet of flame from a blast lamp may sometimes be used to advantage for this purpose. The ticks are not easily killed by ordinary insecticides and survive contact with many unless they are thoroughly wetted. Experimentally I have found that sweet oil, paraffin oil, paraffin and sweet oil mixed, turpentine, and benzine, are successful in killing the adult ticks if the breathing orifices are well wetted; but that all are liable to fail when these parts are not reached. The same is doubtless true of carbolic soap dips and sheep washes. Sometimes oil will pucker up one side of a specimen as if the spiracle on that side had been penetrated, and yet did not kill for many days, if at all.

The third remedial measure, destroying the young ticks on the fowls, is frequently recommended in Australian journals. There is no effective fumigant that can easily be used. Arsenical dips such as are used for killing ticks on cattle are worth experimenting with, but I do not know whether or not they would prove successful against the ticks and harmless to the birds. Hand dressing is a slow process but sometimes is practicable. I know of no better dressing than sweet oil. I found that only two out of twenty adults survived a half minute's immersion in undiluted formalin. Larval ticks were not tested. The following notes explain how the pest was overcome in one instance by a combination of measures:

"The plan adopted by me to get rid of the fowl tick was to burn all the old roosts and nests. Then I had the wooden walls well brushed over with hot coal tar. I then slung new roosts of clean deal with edges planed off, from the roof with wire so that no roost touched the walls. In day-time the fowls can protect themselves if they have a good run. On no account should poles with bark on be used for roosts, as the ticks will hide under loose parts. If any ticks make their appearance in nests I make free use of paraffin applied with brush or feather. The floor is regularly swept clean and sprinkled with wood ashes or lime. Since adopting these measures two years ago, I have not lost a fowl by the pest.

"I may add that some of my neighbors have cleared their fowl houses by frequent use of strong solution of sheep dip, applied with spray pump."

One means of isolating roosts by barrier of grease or oil is illustrated by Figure (4). Since fowls tend to roost as high as they can get in a house, it is advisable to have roosts all one height. The roosts pictured are easily removable and hence more thoroughly cleaned than fixed roosts. Roosts shown in 5, 6, and 7 are removable, being simply slipped over peg-like ends of the fastenings.

In the construction of a new fowl house in a tick area, one aim should be to have the building made as nearly tick-proof as practicable. Corrugated iron is regarded as one of the most desirable building materials for this purpose. Another design with all woodwork outside is illustrated on this page. Four upright half deals, one at each corner, support the structure. Strips of corrugated iron laid crosswise form the front, back and sides. Those forming the ends are screwed to the inside of the posts, and those forming the back and front, to the outside. The lower half of the front is left open, but a sheet of iron hinged at the upper side to admit of closing it at night, could be easily added; likewise a sheet at the back could be made to open outward on hinges so that the egg boxes could be inspected from without. The sheets to form the roof are laid in position and then held down by two battens, one at the back and the other at the front, bound by wire to the corner uprights. Sheet iron is preferred by some poultry men on front, back and sides because of less draft within from the corners. It is recommended that the outside of such houses be kept well painted with white refrigerating paint and the inside with tar. So built the house will afford no shelter within which a tick would lay its eggs. The roosts and nesting boxes should be well looked after once a month.

In conclusion, I would recommend that fowls brought to tick-free premises be quarantined for seven or eight days as a caution against their introducing the pest into their new quarters. The quarantine might be in boxes or crates that could be thoroughly cleansed or destroyed.

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Owens Valley Land

See Announcement on Page 139

Irrigation and Forestry

THE FORESTS OF ALASKA.

On the coast of southeastern Alaska the average precipitation is about 90 inches and trees grow to a large size; in the Central Plateau, the precipitation is less than 15 inches, including the melted snow, and the average size of timber is small; while on the Arctic Slope, north of Rocky Mountains, and the region adjacent to the Behring Sea, climatic conditions make forest growth altogether impossible, and those vast tundras are covered chiefly with moss, sedges, and a few small shrubs; hence, the discussion of Alaska forests in Forest Service Bulletin 81, recently issued by the United States Department of Agriculture, is necessarily confined to the southeastern coast region and to the Central Plateau, lying between the Pacific Mountain system on the south and the Rocky Mountain system on the north and east, and drained principally by the Yukon and the Kuskokwim rivers.

It is estimated that the total forest and woodland area of Alaska is approximately 100 million acres, or about 27 per cent of the land area of the territory. Of these about 20 million acres may possibly bear timber of sufficient size and density to be used as saw timber, while the other 80 million acres is woodland which bears some saw timber, but mostly only firewood.

The coast region has a mild climate, not colder than the northern part of Puget Sound or of Scotland. The stand of trees is dense, averaging for considerable areas 25,000 feet per acre; Sitka spruce forming about 20 per cent of the stand and western hemlock about 75 per cent. Although by far the most abundant species, western hemlock does not produce as large individual trees as the spruce or western red cedar—the former occasionally showing a diameter of six feet with a height of 150 feet, and the cedar attaining diameters of from 3 to 4 feet.

The usual lumber cut in the coast forests of Alaska is about 27,000,000 board feet, almost entirely spruce, as hemlock is but little used, a large part of this output, probably one-third, being used for salmon cases, and much of the best lumber is used in this way. The southern and southeastern coast having a much larger timber supply than will be needed locally for a long time to come, much of the hemlock should be cut and the spruce be given an opportunity to increase. The cutting that has so far taken place on the coast of Alaska has had but small effect upon the forest, the bulk is yet untouched and as it is now overmature, utilization for other purposes than lumber should be encouraged as much as possible. Both spruce and hemlock are good pulpwood and taken together they comprise almost the entire forests. There is faint prospect that, so far as the coast lumber is concerned, it will ever be needed for use in Alaska. The permanent industries of the coast region are fishing and mining, the mountainous character of the country will forever prevent agricultural operations and the natural barriers prevent this lumber from being of present benefit to the interior where the need is greatest and the price high. Besides the timber itself is not suitable for the structural work that will be needed in the interior when that region is more fully developed and made accessible by railroads. The annual growth of the coast forests is in excess of the local needs, and unless methods of utilization which will result in exportation are developed, these products cannot be rightly handled or properly conserved.

But the interior conditions tell a different story. There the forest stand varies from practically nothing, in areas of scrubby black spruce, to 20 or more cords per acre in the birch-aspen type, and several thousand board feet per acre in the best white spruce forests. The best timber of spruce, birch, and poplar grows in the valleys, particularly along the Tanana in the Fairbanks district. Black spruce predominates in the more poorly drained situations. The average of timber is small, while spruce rarely, and balsam poplar sometimes attains 18 to 24 inches in diameter; the white birch and aspen average 8 inches in diameter, though maximum of 18 inches on unusually favorable sites are noted, and black spruce rarely attains a diameter of 6 inches; while the heights of the different species run from 20 feet for the black spruce to 75 feet for the best white spruce. Naturally it is impossible for timber to grow rapidly or to large size in soil permanently frozen. Unlike the coast forests, those of the interior have suffered much from fires; in some cases ten times as much timber has been killed by fire as has been cut for fuel or lumber.

The bulk of the timber cut in the forests of the Central Plateau is for firewood, several times as much being used for that purpose as for lumber. Nor is this surprising, as the interior of Alaska depends entirely upon wood for heat, light, and power. Wood is burned by the Tanana Valley railroad, which has 45 miles of track out from Fairbanks; the river steamers, except three large boats on the Yukon which use oil, burn wood; and the severe weather of the eight months winter, when the thermometer sometimes goes down to 80 degrees below zero, makes the consumption of fuel in domestic affairs much larger than the population—about 30,000—would use under conditions existing elsewhere.

The present sparse population will undoubtedly be greatly augmented, and its need for timber will be large, therefore, its timber supply should be conserved to lessen as far as possible the heavy expense which importation will entail, as transportation is slow, expensive, and uncertain, and by boats which operate only a few months of the year.

Obviously all the forests of Alaska should be protected and made of the utmost permanent use. They should be managed so as to increase the stand of the best timber—spruce—and decrease that of the less desirable hemlock. Utilization of the present overmature timber of the coast should be encouraged, while the insufficient supply in the forests of the interior should be given the best of care, for it is not likely, with most intelligent management, to be able to furnish more than a part of the home demand, as the high grade timber which may be needed will always have to be imported.

FOREST AND SAWMILL.

The importance of conservation of the forests of the country has always been appreciated by members of the National Lumber Manufacturers Association, but recent agitation of the question has made this need more apparent. The last convention of the association which was the eighth annual and was held in New Orleans in April of this year, gave more time and discussion to reforesting and conservation features of the lumber industry than formerly. The discussions were considered of so much value that they were incorporated in book form and a 275 page book is the result. The secretary of the association is Geo. K. Smith of St. Louis, Missouri.

The Rural Californian

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General Agriculture

THE COMPOSITION OF SOILS.

ALL soils are composed of soil grains of different shapes and sizes, and these differences in shapes and sizes have a great deal to do with the fertility of the soil, and with its water holding and air holding capacity. There are two kinds of water in the soil, one existing in a thin film around each soil grain. Hence, the smaller the grain, the more surface in proportion to its size, and the greater the amount of what we call capillary water—which alone is used for growing crops—it will contain.

A sandy soil is always a thirsty soil, for the simple reason that the grains are large, even in the finest sand, and hence can hold comparatively little water. In clay soils the grains are exceedingly fine and close together; hence clay soils hold a vast amount of water in capillary or surface form, although they take up water slowly. Sandy soils take up water rapidly and get rid of it rapidly. So much for capillary water, or water that sticks to the surface of the soil grains and, as above remarked, the only water that is of any use in crop production.

When the spaces between the soil grains are filled up with water, crops cannot grow, for they can use only that portion of the soil that is aerated. It we draw away the water, air fills up the space, and this is the reason why farmers drain their land. The drawing away of this surplus water, or water of gravitation, does not in the least affect the amount of capillary water. Each particle of soil grain when it has opportunity will surround itself with a film of water and will, when evaporation from the surface robs it of its water, get water from below or the water of gravitation. This is what we mean by capillarity. It is by this means that oil rises in a lamp wick and feeds the flame. It is by this that coffee rises in a cube of sugar when you put the edge of it in the cup, because the grains of sugar are pressed close together, but cannot be pressed solid. The reason why surface cultivation of corn retains the moisture of the soil below is because the surface grains are kept so loose, in other words, so far apart, that the water drawn up from below by capillary action cannot climb out and get away.

These are simple elementary statements of facts, and the knowledge that the farmer has of these will have a great deal to do with his farming operations the next year. If he has a piece of ground in which during the entire year the soil is filled with water, he knows it is no use for him to expect to grow a crop. Why? Simply because no grain worth growing will thrive in that kind of soil. In fact, no matter how rich the land is or how deep the soil, no man can cultivate any more than that part of it in which the air is allowed to circulate in the removal of the water of gravitation. If this soil is sandy or gravelly, there is too much air, and the soil grains cannot get enough water for the plants. The finer the soil grains, as in volcanic ash or in clay, the greater the water-holding capacity of that land, and the more it can deliver to the plant if properly handled. The farmer who has to wait until late in the season for the sun to evaporate the water from his land knows two things: that he can use that land only part of the season, and furthermore, that it has been rendered cold by the process of evaporation.

This is probably enough for one lesson; but we wish our readers to study their soils, note the character of the soil grains, note its water holding capacity. They can then so cultivate the land that the maximum of this water can be used for the growing of the crops.—Wallace's Farmer.

DODDER.

It is of the utmost importance that farmers and seed dealers should familiarize themselves with the dodder, otherwise the matter may be talked and written about endlessly and no headway will be made in exterminating the plant from the fields, or in guarding against the use of seed containing dodder. Strictly avoid dodder-infested seed. A purchaser of seed is apt at any time to buy seed containing dodder, unless he has thoroughly examined the seed or has had it examined for him. The cheaper and lower grades of seed, with which some farmers unfortunately are satisfied, are very likely to contain dodder and many other kinds of weed seeds, as well as a large percentage of inert matter and dead seed. Farmers and dealers should become accustomed to the use of a magnifying glass, know common weed seed impurities and make tests for themselves. Thus, if the farmer buys on sample as he should, examines his sample himself, and finds suitable seed, he can without delay purchase his supply from the same bulk lot from which the good sample came. Insist on samples being made up of seed from different parts of sacks or bin; otherwise samples will not be representative of the bulk lots. Though every precaution may have been taken to obtain dodder-free seed, yet a few seeds may have escaped notice and may therefore be present. Thus the clover or alfalfa field will be "spotted" with dodder. Root up everything on the "spots" and burn without moving, or remove and burn if there is no danger of scattering seed. Get far enough out from the borders of the "spots" to make sure that all the dodder is destroyed. Small pieces of plants left continue to grow. Should a field have become generally infested, it is advisable to plow up the clover field before dodder seed is formed. Let the succeeding crop be a cultivated, non-leguminous one. Work out of the ground any dodder seed that may be there, by encouraging them to sprout, and killing the seedlings by cultivation. Should seed have matured before the crop can be plowed under, burn the crop over, then plow and follow with a cultivated crop. Instead of either plowing or burning, shallow cultivation, followed by a cultivated crop kept thoroughly clean, may be resorted to. Here the plan is to cause the seeds to germinate and to destroy the seedlings. Any use desired may be made of the stand of clover on the ground, providing it is cut for hay, pastured or plowed under before the seed is formed. Stubble in the infested field must be plowed under without delay. It should be distinctly understood that dodder is the worst plant enemy.—Indiana Ag. Exp. Sta. Bul.

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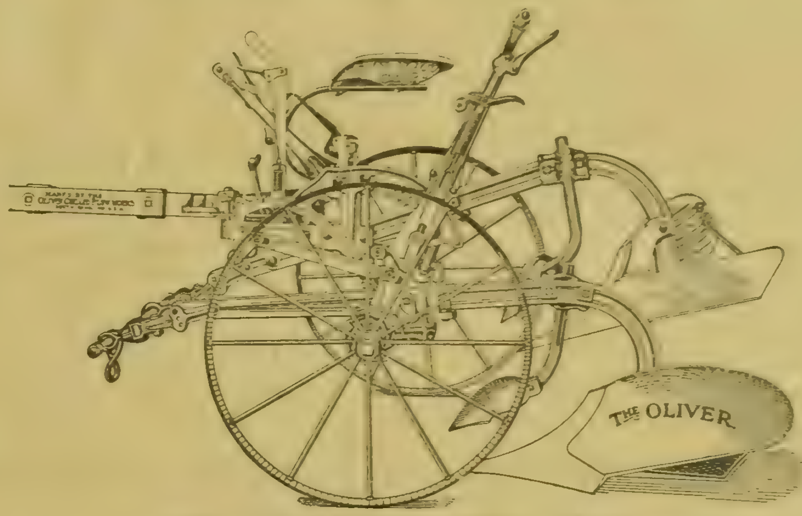

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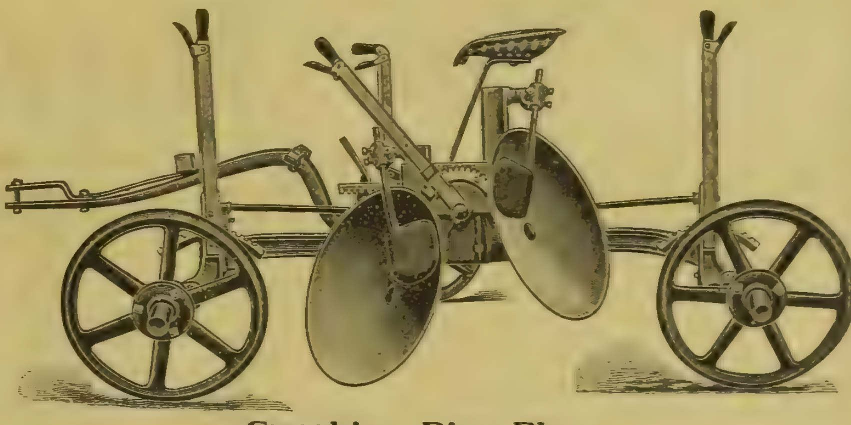

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Queries and Replies

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Snakes—Squirrels.

I note statement regarding squirrels attracting snakes and wish to say that anyone having surplus of snakes may send them to my ranch, as I would like to use them in ridding it of squirrels.—W. A. Doran, San Marcos, San Diego county.

Almond Sheets and Sleds.

Please give me best size and construction of almond sheets and sleds. —T. W. C., Folsom.

This query was referred to Mr. J. P. Dargitz, a large almond grower at Acampo and now secretary and manager of the California Almond Growers Exchange. Mr. Dargitz gives an answer in which we note that the Exchange is prepared to supply all members with sheets. In addition he gives the following information:

"In regard to the best size and construction of almond sled and sheets, will say that I have constructed for my own use this season three sleds 20 feet long. They are on 2x6 runners, and the floor is of No. 3 matched pine flooring, and the sides are of ¾-inch double surfaced 1 x 10 boards. I am using 30 x 30 almond sheets with a hole in the center to fit around the tree, opening from the center to one side.

"If the trees are small, a 24 x 24 sheet will probably be large enough, but the larger the sheet the less almonds to pick up from the ground. We are prepared to supply all our members with almond sheets to a good advantage.

"Cascara Sagrada."

Please allow me to remark that the statement on page 114 of your issue of August 4 is not quite correct. The drug known as "cascara sagrada" is produced only by Rhamnus Purshiana, a native of the northern part of California and of Oregon, which has much larger leaves, but otherwise is very similar to our common Rhamnus Californica, "California coffee." This latter is used as a remedy for "poison oak," and has purgative properties, but not to the extent of the first named. Rhamnus Crocea and its variety Ilicifolia belong to Southern California, the latter exclusively, I believe, and are now known to possess medicinal properties. The very pretty scarlet berries, looking and tasting much like red currants, are, however, reported to have stained in red the bones of the Indians who used to partake of them very freely.

As an ornamental, Rhamnus Crocea, and even more so R. C. Ilicifolia are among our finest native shrubs, and well worth growing in every garden.—Dr. F. Franceschi, Santa Barbara.

Rose Mildew.

I send roses affected with spots and they have a powdery appearance. What is the cause of this condition, and remedy, if any?—G. M., Carpinteria.

These leaves had somewhat the appearance of being affected with common mildew, but at the same time the spots had turned more of a reddish color than usual, so they were referred to Mr. J. Eliot Coit, Acting Superintendent of the Southern California Pathological Laboratory. Mr. Coit answers:

"The rose leaves submitted to us from your subscriber at Carpinteria are affected with the ordinary rose mildew. There are two remedies for this trouble, dusting with sulphur and spraying with a solution of potassium sulphide, three ounces to ten gallons of water. This rose mildew is difficult to handle on account of the fact that preventive measures should be applied very often, if the plants are to be kept healthy."

Carneaux Pigeons.

Is the Carneaux as rapid a squab breeder as the Homer? When a pen is seven years old will the birds breed as good squabs and as rapidly as Homers of same age?—D. D. P., Morganhill.

We are unable to get from pigeon men any information along the line of the query. The Carneaux does not seem to be well known in this state other than that it is considered an excellent breed. Mr. A. W. Bessy, one of the largest breeders of fancy pigeons in the state, also a breeder of fancy canaries, answers our request for information as follows:

"Yours of the 26th to hand regarding the Carneaux being as rapid a breeder of squabs as the Homer. I am told that they are fine for this purpose. Personally, I do not know as I never bred them. My experience has been more with fancy pigeons. As to their being good at seven years old I do not believe that any bird can breed very rapidly at that age, although I have known magpies to breed at 28 years. My experience is that the third or fourth year is the best you get from a pigeon."

Apples for Chickens.

Is there any harm in feeding green apples to chickens? I have an apple tree in yard and notice hens dying after eating. Combs turn perfectly black.—Subscriber, Santa Cruz.

We do not think the death of the chickens is caused by eating apples. The black combs indicate liver trouble which may be corrected by giving diet consisting more largely of green feed and less of grain.

Address Wanted.

Mr. John Bernhard of Ontario would like the address of W. F. Marose a mushroom grower whose article the Cultivator quoted some months ago.

The heavy drop of walnuts during June and July has greatly lessened the prospect for a normal crop in the Tustin and Santa Ana districts of Orange county. The quality so far promises to be good, and far better than last year. With less of quantity, but better quality than last year, growers will probably realize a better price, and be at least as well off as last year. The crop will come earlier.

It is estimated that the new canal necessary to be dug from Sharp's Heading in the Imperial Valley will cost in the neighborhood of a half million dollars.

CELERY BLIGHT AND CONTROL.

(Continued from Page 123.)

in a month or six weeks, depending upon their size, time of year, and moisture conditions. From now on, they should be sprayed every three weeks until the rains start in. The fields at this time of the year should be watched very closely, and if blight can be found, even in the slightest degree, upon any of the plants the field should be sprayed immediately. After the rains have set in the fields should be sprayed at least every two weeks, and if possible, after each storm. It is very important that the plants should be well covered with the Bordeaux for if the blight once gains entrance it is very difficult to check it.

Preparation of Bordeaux Mixture.

The following strength of Bordeaux is strongly recommended:

Bluestone ------------------ 5 lbs.
Unslaked Lime ------------- 6 lbs.
Water ----------------------50 gals.

There are several different methods in vogue by which this mixture is made, but the following has given most satisfactory results:

For example, weigh out 50 pounds of bluestone and suspend it in a sack in a barrel containing 50 gallons of water, leaving this suspended until all the bluestone has dissolved. Next, weigh out 50 pounds of lime, and after carefully slaking it dilute with water to 50 gallons. Great care should be used in slaking the lime, so that in the process it will not be "burned" or "drowned," and it is always best to slake a small amount at a time, rather than using a large quantity.

After the stock solutions have been prepared, they should first be diluted before mixing, and this is of extreme importance. If the solutions have been made according to the above plan each gallon of the lime solution will represent one pound of lime and each gallon of the bluestone solution will represent one pound of bluestone. If the spray tank to be used holds 150 gallons, dip out 15 gallons of the bluestone solution and pour into an empty tank or barrel. Now dip out 18 gallons of the lime solution in another barrel. Then add enough water to the bluestone solution to make 75 gallons, and do the same with the lime solution. They are now ready to be mixed and run into the spray tank. A very convenient and satisfactory method of doing this is by having the barrels on a platform which is a little higher than the spraying machine, and from there the two solutions are run down a V-shaped trough or pipe and the mixture is run into the tank through a sieve. Another method which is commonly employed by the growers in the southern part of the state is to mix these stock solutions, after they have been first diluted, by means of a pump. This does away with the platform and mixes just as thoroughly.

It has been demonstrated by the work done, during the past season especially, that this disease can be controlled by thorough, conscientious, and persistent methods. In order to accomplish the best results from spraying, the fields at the first part of the season must be watched very closely, as the secret of combating this disease successfully lies in the ability of the grower never to let this disease get a foothold in the fields, for the Bordeaux while a very successful preventive is not a cure.

Legal

Edw. L. Payne, attorney, 301-304 Douglas Building, Los Angeles, will answer legal queries in this department.

Immediate mail replies cannot be given except where fee to Mr. Payne is paid. When replies are wished in Cultivator address query to 115½ N. Broadway, Los Angeles.

Rescission of Lease.

"A" rents for one year a ranch belonging to "B" doing business through an agent "C". "A" paid half the rent asked by the agent when the lease was signed, the lease stipulating that the other half was to be paid in six months. Shortly after the lease was executed "B" came to visit "A" and said the price he wrote "C" to rent the ranch for was less than the price "C" asked "A" to pay and half of which "A" paid when the lease was drawn. "A" asked "C" when the lease was drawn if the price he ("C") asked was the lowest price "B" would take—"C" said yes, when he know that "B" had instructed him to rent for less. The ranch rented last year for the price "B" was willing to accept this year and which he wrote his agent "C" to rent the place for.

"A" now refuses to pay the price asked by the agent claiming he "C" is getting money by false pretense and misstatement of fact. Can "C" collect the full amount mentioned in lease or only amount "B" told him to rent place for?—Subscriber, Pomona.

If "A" were deceived by "C" into renting the property mentioned, "A" might rescind the lease and return the possession of the property to the agent or his principal, demand back the amount of rent paid, and if damaged, might recover damages for deceit from the agent. If "A" desires to make rescission he should act promptly after the discovery of the deceit, and if he has in any way ratified the lease after the discovery of the deceit, it is too late to rescind. "A" has no right to continue in possession of the property under the lease and retain any of the rent agreed upon, without the consent of "B". Of course, with "B's" consent he might do so.

"C" has no right to profit by this deceit, and the excess of rent above what "B" authorized "C" to rent the property for belongs to "B" in case "A" does not see fit to rescind the agreement.—E. L. P.

TRIANGLE TRIP.

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If preferred, trip can be reversed, leaving San Francisco at 8:15 a.m. via the Coast to Monte Rio and returning along the river and through the valleys, arriving at San Francisco 7:05 same evening. On Sundays an extra train arrives at 9:05 p.m.

Round trip fare for Triangle Trip, $2.80, except on Fridays or Saturdays, it is $2.50 and on Sundays only $2.20.

CALIFORNIA TOBACCO.

Experiments in tobacco growing have been made in California for several years, and a few months ago the Cultivator chronicled the sending out of the first car of California grown tobacco. Soil and climatic conditions are said to be typical, unless it be that the aridity of the climate is an objectionable feature to be considered in the growing. This has, however, been largely overcome in practical experiments and the industry has promise of extension. A new section to take up this work is the Kings River Thermal Tract along the foothills just above the Kings River some 16 or 18 miles almost directly east of Fresno. The M. E. Miller Company which has control of these lands arranged a few months ago with a practical tobacco grower recently from Tokat, Sivas Province, Turkey. In that section which sends out some of the finest Turkish tobacco which is brought to the United States, many conditions are similar to those of eastern Fresno county. It is about 700 feet above sea level and has an average temperature of about 90 degrees, has no fog whatever in the summer or spring months, neither does it have rain during June, July and August. The gentleman's name is Mihran Timoor, and he brought from Turkey with him four different kinds of seed, that of the Smyrna, Samson, Bafra, and Covala. This seed was planted in seed bed during the last of April and first of May and reset in field about the first of June. This two month's field growth shows at this time large stalks already blossoming and the four lower leaves of which are ready to harvest. The bottom, upper bottom, middle, and top leaves are kept separate and graded from the time of picking until the close of curing. The milder leaves are the ones at the bottom. The harvesting extends over about 60 days from the first of August, and the curing is expected to take about 70 days, so that the product will not be ready for marketing before about the first of February.

Those who understand the growing of tobacco assert that these experiments will produce a leaf which will equal, if not excel, many of the choicer varieties imported from Turkey which take millions of dollars from this country annually.

ORIGIN OF THE NAME CALIFORNIA SETTLED.

Professor George Davidson, of San Francisco, the well known geographer and astronomer, after an exhaustive inquiry into the origin of the name California, confirms the contention that it was first used in an old Spanish romance. The tale related to a fabulous island of the Pacific, styled California, where was an Amazon queen called Califia.

The derivation of the name thus invented by the novelist is supposed to have been from two Greek words: "kalli," meaning beautiful, and "ornis," a bird, the latter referring to Califia's griffins, with the letter "f" inserted for the sake of euphony.

This origin of the name is the more probable from the fact that the novel is said originally to have been written in Greek.

Later the name California was used by Bernal Diaz, a Spaniard who wrote a history of the conquest of Mexico. He said Cortez gave it to Lower California, where he founded a colony in 1535. It is assumed that Cortez got it from the romance mentioned.

An old supposition, that "California" was derived from two Latin words meaning "hot furnace," is rejected by Davidson as impossible, and certainly was never in keeping with the climate of the state.

The Professor has written a little book on the subject, which doubtless will be accepted as authoritative, and thus the old question of derivation be set at rest.—Sacramento Bee.

IRRIGATION OF ORCHARDS.

The U. S. Department of Agriculture has just issued a Farmers' Bulletin on the Irrigation of Orchards, by Dr. S. Fortier. This bulletin takes up the subjects of the selection of land for orchards; water supplies; clearing and preparing the land; locating trees; methods of irrigating, and times; duty of water; losses due to evaporation and seepage, winter irrigation; etc. The report contains many illustrations and the material is based on the best practice of the arid region, and is intended primarily for the use of settlers. It is known as Farmers' Bulletin No. 404, and may be had free upon application to any Representative in Congress, or to U. S. Irrigation Investigations, Berkeley, Cal.

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FOR SALE—A BYRON-JACKSON centrifugal pump, No. 6, with a 22-foot frame. All complete and in good working order. AUGUST PEUKERT, R.F.D. No. 12, Box 436, Los Angeles, Cal. Or call at the corner of South Park and Florence Ave.

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FOR SALE—50 H. P. FAIRBANKS-Morse distillate engine. Owner will guarantee for one year. MACHINERY EXCHANGE, Main and Bruno Sts., Los Angeles, Cal.

TREES.

FINE LARGE EUREKA LEMON AND Valencia Orange trees, fine for replanting. Choice lot of fine Wash. Navels. Order quickly. They are going. Home 'phone 1731. JOHN R. KING, Whittier, Cal.

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FOR SALE—815 ACRES IN SAN LUIS Obispo County. A typical dairy ranch. Plenty of wood, water, irrigable land, buildings, fenced and cross fenced. Orchards, vineyards, oranges, lemons and walnuts do exceedingly well here. 40 acres of land suitable for these. Price $21 per acre. For further particulars apply to MRS. F. A. CLINK, Pozo, Cal.

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Household Department

"How can I teach your children gentleness,
And mercy to the weak, and reverence for life,
When by your laws, your actions and your speech,
You contradict the very things I teach?"
—Longfellow.

HOW I EDITED AN AGRICULTURAL PAPER.

I DID not take the temporary editorship without misgivings. But circumstances made the salary an object.

Being at work again was luxurious. All week I wrought with unflagging pleasure. I waited a day with solicitude to see whether my effort was going to attract notice. As I left the office a group at the foot of the stairs dispersed and I heard one or two say "That's him." I was naturally pleased. Next morning I found a similar group and scattering couples and individuals in the street watching me with interest. The group fell back and I heard a man say, "Look at his eye." I pretended not to notice, but secretly I was pleased, purposing to write an account of it to my aunt. I heard cheery voices and a ringing laugh as I drew near the door, which I opened and caught a glimpse of two young, rural-looking men. Their faces blanched and lengthened when they saw me and they plunged through the window.

In about half an hour an old gentleman with a flowing beard and a fine but austere face entered. He seemed to have something on his mind. He set his hat on the floor and took out a red silk handkerchief and our paper. While he polished his spectacles he asked: "Are you the new editor?" I said I was. "Have you ever edited an agricultural paper before?" I said "No." "Have you had any experience in agriculture practically?" "I believe I have not." "Some instinct told me so," said the old gentleman, looking at me with asperity. "I wish to read what must have made me have that instinct. It was this editorial:

"'Turnips should never be pulled. It injures them. It is much better to send a boy up and let him shake the tree.'

"What do you think of that?"

"I think it is good. It is sense. Every years millions of bushels of turnips are spoiled in this township alone by being pulled half ripe, when, if they had sent a boy to shake the tree—"

"Shake your grandmother! Turnips don't grow on trees!"

"They don't, don't they! Who said they did? The language was intended to be figurative. Anybody that knows anything will know that I meant that the boy should shake the vine."

Then this old person tore his paper into shreds, broke things with his cane and said I did not know as much as a cow. I fancied he was displeased about something. But, not knowing what the trouble was, I could not help.

Pretty soon a long, cadaverous creature darted within the door. After scanning my face a while he drew our paper from his bosom and said: "You wrote that. Read it, quick. Relieve me. I suffer."

As the sentences fell from my lips I could see the relief come, the drawn muscles relax, the anxiety go out of the face and rest and peace steal over the features like the merciful moon-light over a desolate landscape.

"The guano is a fine bird, but great care is necessary in rearing it. It should not be imported earlier than June or later than September. In the winter it should be kept in a warm place where it can hatch its young.

"We are to have a backward season for grain. Therefore it will be well for the farmer to begin setting out his cornstalks and planting his buckwheat cakes in July instead of August.

"Concerning the pumpkin: This berry is a favorite of the natives of the interior of New England, who prefer it to the gooseberry for making fruitcake, and likewise give it the preference over the raspberry for feeding cows, as being more filling and fully as satisfying. The pumpkin is the only esculent of the orange family that will thrive in the north except the gourd and one or two varieties of the squash. But the custom of planting it in the front yard with the shrubbery is fast going out of vogue, for it is generally conceded now that the pumpkin as a shadetree is a failure.

"Now, as warm weather approaches and the ganders begin to spawn—"

The excited listener sprang toward me to shake hands and said: "There, that will do. I know I am all right now. You have read it as I did, word for word. But when I first read it I said to myself: 'I never believed it before, notwithstanding my friends kept me under watch so strict, but now I believe I am CRAZY.' With that I fetched a howl you might have heard two miles and started to kill somebody. I read one of them paragraphs over again, to be sart'n, and then burned my house. I have crippled several people and have one fellow up a tree where I can get him if I want him. But I thought I would call as I passed and make perfectly sart'n; and now it is, and it is lucky for the chap in the tree. I should have killed him, sure. Goodby. You have taken a great load off my mind. My reason has stood the strain of one of your agricultural articles and I know that nothing can ever unseat it now."

I felt uncomfortable about the cripplings and arson, for I could not help feeling remotely accessory to them. But these thoughts were quickly banished, for the regular editor walked in. The editor was looking sad and perplexed.

He surveyed the wreck and said: "This is a sad business. There is the mucilage bottle broken, six panes, a spittoon and two candle sticks. But that is not the worst. The reputation of the paper is injured—permanently, I fear. True, there never was such a call for the paper before; it never sold such a large edition or soared to such celebrity; but does one want to be famous for lunacy and prosper on infirmities of mind? * * * You speak of a furrow and a harrow as being the same, talk of the moulting season for cows and recommend the domestication of the polecat on account of its playfulness and its excellence as a ratter. Your remark that clams will lie quiet if music be played to them was superfluous. If you had made acquiring ignorance the study of your life you could not have graduated with higher honor than you could today. Your observation that the horse-chestnut as an article of commerce is steadily gaining in favor is calculated to destroy this journal. It makes me lose patience every time I think of your discussing oyster beds under landscape gardening. Why didn't you tell me you didn't know anything about agriculture?"

"Tell you? I have been in the editorial business going on fourteen years, and this is the first time I ever heard of a man having to know anything in order to edit a newspaper. You try to tell me anything about the business! I have been through it all from Alpha to Omega, and the less a man knows the bigger noise he makes and the higher salary he commands."—Mark Twain.

◆

CHOPPED MEATS.

Chopping meat is one of the principal methods of making tough and inexpensive meat tender, i. e., dividing it finely and thus cutting the connective tissue into small bits. Such meats have another advantage in that they may be cooked quickly and economically.

In broiling chopped meat the fact should be kept in mind that there is no reason why it should not be cooked like the best and most expensive tenderloin. The only reason that ever existed for difference in treatment was the toughness of the connective tissue, and this feature has been overcome by the chopping. The ideal to be reached in broiling steak is to sear the surface very quickly, so that the juices which contain the greater part of the flavoring of the meat shall be kept in, and then to allow the heat to penetrate to the inside until the whole mass is cooked to the taste of the family. To pass the point where the meat ceases to be puffy and juicy and becomes flat and hard is very undesirable, as the palatability is then lost. Exactly the same ideal should be kept in mind in broiling chopped meat. If this were always done, hard, compact, tasteless balls or cakes of meat would be served less often. To begin with, the broiler should be even more carefully greased than for a whole steak. This makes it possible to form the balls or cakes of chopped meat with very little pressure without running the risk of having them pulled to pieces by adhering to the wires of the broiler. They should be heated on both sides even more quickly than the steak, because the chopping has provided more ways of escape for the juice, and these openings should be sealed as soon as possible. The interior should be cooked to the taste of the family just as the steak is.

In regard to broiling it may incidentally be noted that housekeepers often make themselves unnecessary work when broiling under gas by allowing the juice from steaks or meat balls to drop into the large pan under the rack. A smaller pan set in the larger one may be made to catch all the juice and fat and is much easier to wash. It serves also to economize the gravy.

Chopped raw meat of almost any kind can be very quickly made into a savory dish by cooking it with water or with water and milk for a short time, then thickening with butter and flour, and adding different seasonings as relished, either pepper and salt alone, or onion juice, celery, or tomato. Such a dish may be made to "go further" by serving it on toast or with a border of rice or in some similar combination.

Tough Portions of Porterhouse Steak.

Before speaking of the cooking of the cuts that lack tenderness throughout, it may be well to refer to the fact that the flank end of the porterhouse is to be classed with the toughest of cuts and with those which, when cooked alone, are with difficulty made tender even by long heating. Mock duck, which is commonly made out of flank steak, can be rendered tender enough to be palatable only by long steaming or cooking in water, and yet people quite generally broil this part of the steak with the tenderloin and expect it to be eaten. The fact is that to broil this part of the porterhouse steak is not good management. It is much more profitable to put it into the soup kettle or to make it into a stew. In families where most of the members are away during the day the latter is a good plan, for the end of a steak makes a good stew for two or three people. This may be seasoned with vegetables left from dinner, or two or three olives cut up in gravy will give a very good flavor; or a few drops of some one of the bottled meat sauces, if the flavor is relished, or a little Chili sauce may be added to the stew. But if the tough end of a porterhouse is needed with the rest, a good plan is to put it through a meat grinder, make it into balls, and broil it with the tender portions. Each member of the family can then be served with a piece of the tenderloin and a meat ball. If the chopped meat is seasoned with a little onion juice, grated lemon rind, or chopped parsley, a good flavor is imparted to the gravy.

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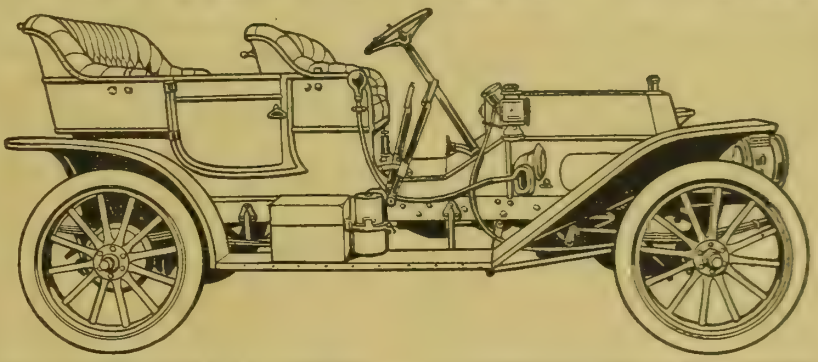
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San Francisco and Los Angeles Produce Markets

Los Angeles Markets

LOS ANGELES, Aug. 10, 1910.

Butter.

Butter advanced 34½ cents Monday and shows the highest price of any market in the United States today. Market is very firm.

Price to trade 2½c in advance of the following Produce Exchange quotations:

Extras ...	34½
Firsts ...	31
Cooking ...	23½

Cheese.

Northern fresh	17
Anchor, large	18
Oregon Daisy	18½
Imported Swiss	30
Domestic Swiss	23@25

Eggs and Poultry.

Eggs very firm and both case counts and extras are higher with Northern and Eastern sections showing advance.

Paying price f. o. b. L. A. is:

Local ranch candled	35
Case count buying price	31
Eastern fresh	27
Eastern storage	25

Dealers pay for live poultry f. o. b. L. A.:

Hens, per lb	15@17
Roosters ...	9
Broilers ...	16@17
Turkeys ...	22@24
Geese ...	12
Ducks ...	14¼
Squabs, per doz	1.50

Live Stock.

The following quotations are f. o. b. Los Angeles, on all stock:

Hogs, 175 to 200 lbs	9½
Prime Steers	5
Heifers ...	4@4½
Calves, per lb	5¼
Sheep ewes, per head, shorn	4.00@4.50
Lambs, per head	3.50
Wethers, shorn	4.00@4.50

Potatoes.

Wholesale prices are:

Local Burbanks, ctl	1.35
Highlands ...	1.35@1.50
Sweets, Yellow, per lb	3½@4

Onions.

Wholesale quotations:

Silver Skin, per ctl	3.00
Brown Globe	2.00
Bermudas, crate	1.50
Garlic ...	8

Vegetables.

Wholesale quotations:

Asparagus ...	15
Artichokes, northern, doz	85
Beets, sack	90
Beans, green	4
Beans, Limas	5
Brussels Sprouts	10
Bell Peppers	6
Green Chilis	4@5
Cabbage, per sack	1.35@1.50
Cucumbers, per box	40@50
Celery, crate	3.50@4.00
Cauliflower, per doz	1.25@1.35
Carrots, per sack	90
Egg Plant, per lb	4
Endive, doz	40
Green Corn, box	35@50
Green Onions, per doz. bunches	20@25
Lettuce, choice, per crate	1.00
Leeks, per doz	35
Okra, lb.	6
Peas, per lb	5@6
Parsley, per doz. bunches	25
Parsnips, doz. bunches	15@20
Radishes, per dozen bunches	10@15
Rhubarb, strawberry, per box	1.25
Rhubarb, crimson winter	75
Spinach, per dozen	15@20
Summer Squash	35@50
Turnips, sack	90
Water Cress, doz. bunches	25@35
Tomatoes, box	40@50

Citrus Fruits.

Valencias ...	3.50@4.00
Grapefruit ...	2.00@3.00
Lemons ...	3.50@5.00

Fresh Fruits.

Wholesale prices on the market are:

Alligator Pears, per doz	3.00@4.00
Apples, W. Astrachan	1.50@1.60
Apples, Belloflwers	1.15
Gravensteins ...	1.25@1.50
Alexander, lug	1.15@1.40
Crabapples, box	1.25
Cantaloupes, crate	2.25
Figs, box	1.25
Grapes, lug	1.00@1.25
Pears, box	1.00@1.10
Bartletts ...	1.75
Strawberries ...	4@5
Raspberries ...	6@7
Blackberries ...	7
Pineapples ...	6@7
Logans ...	5@6
Nectarines ...	1.00@1.25
Peaches, box	60@1.25
Plums, box	75@1.25
Prunes, box	75@1.25
Quinces, lug	1.00@1.25
Watermelons, lb.	1@2

Dried Fruits.

Wholesale prices are:

Apricots ...	12@13
Evap. apples, fy, per lb	8½
Peaches ...	7
Pears ...	12
Nectarines ...	8@10
Prunes ...	4@9
Plums ...	7@8

Beans Dried.

Wholesale quotations:

Limas, per ctl.	4.75
Pink, No. 1	7.25
Black eyes	6.00
Lady Washington	4.50
Small white	4.50
Garvanzas ...	4.50
Lentils ...	7.00

Nuts.

Wholesale quotations are:

No. 1 soft shell walnuts	15
No. 2 soft shell	10
Walnuts, budded	16
Almonds, IXL, per lb	17
Pecans, polished	15
Peanuts ,Eastern	7¼@7½
Peanuts, Cal.	5@6

Honey.

Wholesale quotations:

Extracted water white	8¼
Comb W. W.	18
Light amber	15
Beeswax ...	30
Extracted light amber	7

Hay.

Buying prices f. o. b. cars L. A. are:

Barley hay	8.50@11.00
Alfalfa ...	9.00@10.00
Wheat hay	10.00@12.00
Tame oat	11.00@13.00

Grain.

Wholesale selling price f. o. b. Los Angeles:

Wheat, new, per ctl	1.90@1.95
Corn ...	1.80
Popcorn, ctl.	3.00@3.45
Egyptian corn	1.85
White oats	1.90
Seed Rye	2.10
Seed Barley	1.30

Feed Stuff

Wholesale selling price f. o. b., Los Angeles:

Cracked Corn	1.85
Cracked Wheat	2.05
Shorts ...	1.80
Bran ...	1.55
Oil cake meal	2.50
Feed Meal	1.90
Rolled Barley	1.25

San Francisco Markets

SAN FRANCISCO, Aug. 9, 1910.

Butter.

Butter is firmly held, but buyers are not taking freely. A material advance on quotations is noted for the week.

The official quotations of the San Francisco Wholesale Dairy Produce Exchange for today are as follows:

California extras, per lb	33
California firsts	30½
California seconds	28

Cheese.

California flats, new	12½@15
Cal. Young Amer. fy. new	16½@17½

Eggs and Poultry.

Holders are asking 36 cents but no sales are noted above 35 for extras. Market very firm and advance promised.

Official quotations of the S. F. Wholesale Dairy & Produce Ex. are:

Fresh ranch extras	35
Firsts ...	32
Seconds ...	23
Thirds ...	20
Hens, per doz.	5.00@10.00
Roosters, per doz.	5.00@9.00
Fryers, per doz.	5.00@5.50
Broilers ...	2.50@3.50
Geese ...	1.75@2.00
Ducks ...	4.50@7.00
Pigeons ...	1.50@2.25
Squabs ...	2.50@2.75

Live Stock.

San Francisco prices gross weight:

Steers ...	3½@5
Cows and heifers	2½@4
Hogs ...	6@10
Calves per lb	4½@6
Milk Lambs, unshorn	6@6¼
Wethers No. 1	5
Ewes No. 1	4½

Potatoes.

Wholesale market quotations:

River White, new, box	60@85
Merced Sweets, lb	3

Vegetables.

Wholesale quotations:

Artichokes ...	35@40
Asparagus ,per box	50@1.75
Beans, string, per lb	2@4
Beans, Limas, lb	3@4
Cucumbers, box	25@40
Celery, per crate	90@1.50
Chili Peppers, per box	35@40
Bell Peppers	6@7
Green Corn, sk	1.00@2.00
Egg Plant, per box	40@65
Lettuce, per crate	4.50@5.00
Okra, box	40@50
Peas, per lb	4@6
Rhubarb, box	50@75
Summer Squash, box 25 lbs	50@75
Tomatoes ...	40@75
Garlic ...	3@4

Onions.

Onions, sk.	1.25@1.40

Citrus Fruits.

Valencias ...	2.50@4.50
Grapefruit ...	1.50@3.50
Lemons ...	2.50@5.50
Limes ...	5.50@6.00

Fresh Fruits.

Apples, box	50@90
Apples, Gravensteins	1.00@1.10
Crabapples ...	50@1.00
Apricots, crate	50@65
Nutmegs ...	40@65
Figs, box	40@65
Grapes, seedless	40@65
Grapes, Muscat	60@75
Huckleberries, lb.	8@12½
Pears, large box	60@1.10
Bartletts, wrapped	1.00@1.25
Bartletts, ton	35.00@45.00
Peaches, box	40@75
Nectarines, red	40@90
Plums, crate	60@85
Tragedy Prunes, box	60@75
Strawberries, chst.	5.00@7.00
Logans, chest	6.00@8.00
Pineapples, doz.	2.50@3.00
Watermelons, per doz	1.25@2.50

Dried Fruits.

Santa Clara prunes	3¼@3½
1 cent premium for larger sizes.	
Apricots per lb. Royal	9@10
Peaches ...	5@5½
Apples, evap.	7½@7¾
Pears ...	5@7½
Figs ...	3¾@5
Nectarines ...	5@6
Plums ...	7@8

Futures on 1910—Apricots, 9½@10¾; Moorparks, 11@12. Peaches, 5½@6½. Prunes, Santa Claras, 3¾@4¼, ½ cent premium. Figs, 3½@5.

RAISINS—1909 crop, f. o. b.; fancy seeded, 16-oz. cartons, 5@5¼c; do, 12-oz., 4½c; do, choice, 16-oz., 4½@4¾c; choice. 12-oz., 4c; 50-lb. boxes loose Muscatels, standard, 4-crown, 4@4½c; 3-crown, 3¼@3½c; 2-crown, 2½@3c; seedless Thompson, unbleached, 3c; do, bleached, 5@6c; Sultanas, unbleached, 2¼c; do, bleached, 4@4½c; Muscatels, unbleached, 2¼c; London layers, clusters, 2-crown, 85@90c; 3-crown 90c@$1; 4-crown, $1.30@1.50; 5-crown, $1.75@2; 6-crown, $2@2.50.

Nuts.

Walnuts, S. S. No. 1	13½
Walnuts, hard shell	13
Almonds, '09, N. P. U.	13½@14
Almonds, '09 Nonp	15@15½
Almonds, I X L	14@14½
Pecans	15@17
Chestnuts	14@15

Beans Dried.

Limas ...	4.45@4.60
Pink ...	5.80@6.00
Black eyes	5.60@5.75
Small white	3.90@4.05
Large white	3.80@4.00
Kidneys ...	6.75
Garvanzas ...	3.25
Bayo ...	6.35@6.50
Horse beans	1.75
Red Mexicans	6.00
Cranberry ...	4.50@4.75

Hops

Hops, 1909 crop	10@14
Hops, 1908 crop	8@10

1910 contracts now being made at 12@14 cents.

Honey.

White comb	14@15
Amber ...	10@12
Extracted W W	7½
Extracted light amber	6½@7
Beeswax, per lb	24@30

Hay.

Scott, Magner & Miller report:

Receipts of hay on the market during the week ending today have totaled the large sum of 5600 tons. On last Monday the market was burdened with about 1500 tons. It was impossible to move from the railroad cars the entire arrivals, and therefore demurrages of $6.00 per car per day were imposed upon those cars that were not removed within 48 hours after arrival. The market seemed demoralized and without proper or satisfactory basis.

The export demand has been very moderate.

Alfalfa hay is the exception to the general dull condition of the market. Inquiries from the North for large quantities of alfalfa hay have been received in this market and considerable alfalfa has been sold to this trade. In view of this large outlet for alfalfa, and the fact that the dairymen and other large consumers of alfalfa have not yet laid away their winter supply, there is a decided firmness in the alfalfa situation, and it is expected that this article will further advance.

The demand for straw is decidedly light, as quantities of cheap hay are now being used for bedding purposes.

Fancy wheat	12.50@13.00
No. 1 wheat or wh and o	10.50@11.50
No. 2 wheat or wh and o	9.00@10.00
Choice tame oat	11.00@12.00
Other tame oat	8.00@10.00
Wild oat	7.50@9.50
Stock hay	5.00@6.00
Alfalfa ...	7.50@11.00
Straw ...	40@55

Grain.

Wheat No. 1	1.65@1.70
Barley, good to choice	1.05@1.07½
Barley, poor to fair	1.00@1.05
Oats, white	1.65@1.70
Rye, new crop	1.50@1.60
Corn, large yellow	1.55@1.60
Alfalfa seed	16@18
Mustard brown	3¾@4½
Millet ...	2½@
Flaxseed ...	4½@5
Broom corn seed, per ton	23.50

Feed Stuff

Bran, per ton	23.00@25.00
Feed cornmeal, per ton	34.00@35.00
Cracked corn	34.00@36.00
Ground barley, per ton	23.00@25.00
Rolled oats, per ton	28.00@29.00
Middlings ...	32.00@34.00
Oil cake, per ton	40.00@41.50
Cocoanut cake per ton	25.00
Mixed feed, per ton	24.00@30.00
Shorts ...	24.00@26.00

Deciduous Market

SACRAMENTO, Cal., Aug. 6, 1910.

The following from the circular of the California Fruit Distributors gives number of cars of deciduous fruit shipped from all points in California for the week (7 days) ending Friday morning, August 5, 1910.

Peaches.

Two hundred and sixty-eight and one-half cars. As predicted last week, there has been a considerable falling off in the shipment of this variety of fruit during the past week and there will be a further decline in the coming week. There will be a reasonable quantity of fruit available, but the large supplies for the season have been exhausted. There will be ample supplies of our finest Yellow Clings available during the next two or three weeks.

Plums.

One hundred and ten and three-fourths cars. A slight decline in the shipment of this variety is to be noted but not as great as was expected. The same varieties are going forward as were being shipped last week. It is not expected that plum shipments will keep up to this volume for more than a few days.

Pears.

Two hundred and seventy-one cars Over 100 cars less of pears went ou this week than the preceding one There will be a further decline durin the coming week. Fall and winte pears are reported as being a ligh crop.

Grapes.

One hundred and sitxy-one car Nearly three times as many grape went forward this last week as during the preceding seven days. Varieties continue the same as last week Increased quantities of Malagas ar now going forward and beginning th latter part of the week some fine Blac Prince will be available in carlot Grapes have been of unusually goo quality so far and this is expected t prove true throughout the season.

Weather conditions have remaine favorable since our last report.

ALMONDS.

The Almond Growers' Associatio sends the following circular under da of Aug. 9:

Word from Rotterdam gives quotations on almonds that sound good us. Sicily almonds are offered Rotterdam for September and October delivery at prices which are a surprise.

Advices from Leghorn indicate a ood crop 'in Sardinia (hardshells). rench dealers, however, are already idding for these almonds, which conrms the reports of short French crop. pening prices would indicate about ¼c. delivered New York, duty paid.

Liverpool advises as follows: "The atania (Sicily)) and Valencia (Spain) rops of almonds are said to be very hort, shorter than last year. No rices have yet been made."

Our selling agents report great volme of correspondence and that somehing will come to a head shortly. In ict we hope to be in a position to uote out prices and go to selling now n about ten days.

Harvesting is progressing. Everyhing moving according to program nd like clockwork. Several Associaions have added new members in the st week, one of them representing a arload.

Our shipment of almond bags arived at San Francisco the 5th and will e shipped out to the various Associaions by the 9th or 10th.

Citrus Market

LOS ANGELES, Aug. 10, 1910.

Valencias have eased off slightly, due ɔ large number of shipments. There as been a desire to clean up and close number of the packing houses, which as induced the heavier shipments. At he present time there is a material alling off of shipping and this shrinkge will doubtless correct the market within the next week. In any case the mall quantity of fruit to go will comand fair average.

Lemons are very strong. Foreigns re coming in limited quantities and ndications are for present prices of 5.50 and $6.00 f. o. b. Southern Caliornia points. If given hot weather rices will be still stronger, but anyhing lower than present can hardly be xpected for the coming three months nder any weather condition.

hipments.

Shipments of citrus fruits to date ince November 1, 1909, 28,041 cars, of which 23,936 were oranges and 4,105 emons. To same date last year, 34,760 ars, of which 29,307 were oranges and 453 lemons.

NEW YORK, Monday, Aug. 8.—With ecreasing supplies and an active demand, the market for California late Valencia oranges was strong with an upward tendency on fancy fruit, which brought comparatively high prices at oday's auction sales.

VALENCIAS—	Avge.
Dixie, ch., C. C. U.	$2.50
tag, A. C. G. Exchange	5.45
ointer, A. C. G. Exchange	3.85
ista Bonita, sd., J. A. Graham	3.90
ake Hemet	3.15
Mission Indian	2.50
irship, V. C. Exchange	4.05
ed Shield, A. C. G. Exchange	3.25
reen Crown, A. C. G. Exchange	2.10
urora, fy. or., E. Peycke Co.	4.75
una, xc. or., E. Peycke Co.	3.75
itus Ranch, fy., San Marino G.P.A.	3.80
l Toreador, sd., San Marino G.P.A.	2.65
itus Ranch, fy., San Marino G.P.A.	3.85
l Toreador, sd., San Marino G.P.A.	2.80
one Palm, McGowan & W.	3.90
each, sd., McGowan & W.	2.90
lue Banner, Pioneer Fruit Co.	2.85
ride of West, Pioneer Fruit Co.	2.30
ishop, sd., Ely Graham F. Co.	3.30
ld Mission, fy., Chapman	6.95
ld Mission, ch., Chapman	5.85
olden Eagle, sd., Chapman	4.20
GRAPEFRUIT—	
ld Mission, fy	3.90
olden Eagle	3.35
pland Bear, halves	1.90
oyote, boxes	3.10

BOSTON, Monday, Aug. 8.—Nine cars old. Favorable. Market firm on good ock.

VALENCIAS—	Avge.
ncoln, A. H., Pachappa	$3.60
obusta, A. H., Pachappa	4.85
ajestic, xc., C. S. Spencer	3.85
nta Anita, E. J. Baldwin	3.60
andard, sd., National O. Co.	3.00
alifornia Beauty	2.45
lue Star, ch., W. & Strong	2.05
ta Cresta, A. H., Pachappa	5.85
obo, A. H., Pachappa	3.20
rchard, or., National Orange Co.	3.70
lossom, xc., Red. M. O. Dis.	3.15
ecurity, fy. or., G. S. & S.	2.70
Puck, sd., G. S. & S.	2.20
Shasta Daisy, xf., J. Curtis F. Co.	1.95
SWEETS—	
Tiger	3.20
Floral	2.30
ST. MICHAELS—	
Tiger	3.45
Floral	2.80
GRAPEFRUIT—HALVES—	
Tiger	1.25
Floral	1.05
Robusta	1.75
Orchard	2.20
LEMONS—	
Squirrel, A. H., Pachappa	4.40

ST. LOUIS, Monday, Aug. 8.—Cloudy. Three cars sold. Market weak account the weather.

VALENCIAS—	Avge.
Fiesta, Riverside Exchange	$2.85
Pond Lily	1.80
Scroll	1.70
LEMONS—	
Justrite, Q. C., Corona	4.25
Minerva	3.70
Defender, xc., Altland Fruit Co.	3.00
Crusader, or., C. J. Shepard	2.45

PITTSBURG, Monday, Aug. 8.—Four cars sold. 'Very steady, both oranges and lemons. Cool and clear.

VALENCIAS—	Avge.
Lotengo, fy., Sparr Fruit Co.	$3.80
Senorita, sd., Sparr Fruit Co.	2..65
Cougar, Covina Exchange	3.45
Gavilan, Riverside Exchange	2.65
Deloro, ch., Sparr Fruit Co.	3.40
Red, C., Covina Exchange	4.15
Braeside, Riverside Exchange, Riv.	3.40
Pride of Cal., Riv. Exchange	1.95
LEMONS—	
Whittier, S. T., Whittier	5.00
Pico	4.60
Housewife, Riverside Exchange	4.20

CLEVELAND, Monday, Aug. 8.—One car Valencias, one lemons sold. Market higher. Clear and cool.

LEMONS—	Avge.
Quail, O. K. Exchange	$5.65
VALENCIAS—	
Mother Colony, S. T., Anaheim	4.60
Carnival, S. T., Anaheim	4.10

CINCINNATI, Monday, Aug. 8.—Warm. Steady on oranges and lemons. One car Valencias, three lemons sold.

LEMONS—	Avge.
Pride of Corona, Q. C., Corona	$5.30
Grove, Q. C., Corona	3.95
Pet, S. A. Exchange	6.10
Bridal Veil, Limoneira Co.	5.35
Corona Beauty, Q. C., Corona	4.90
Arab, S. A. Exchange	6.15
Greyhound, S. A. Exchange	5.65
White Cross, Limoneira Co.	4.85
VALENCIAS—	
Lark, O. K. Exchange	3.45

PHILADELPHIA, Friday, Aug. 5.—Three cars Valencias sold.

VALENCIAS—	Avge.
Red, C., Covina Exchange	$4.70
Cougar	3.70
Golden Sceptre, or., Rialto O. Co.	3.65
Pride of West	2.95
Plain Ends	3.15
GRAPEFRUIT—	
Golden Sceptre	3.15

PHILADELPHIA, Monday, Aug. 8.—Three cars Valencias and two cars lemons sold.

VALENCIAS—	Avge.
Glendora Hts., A. C. G., Glendora	$5.50
Hunter, A. C. G., Glendora	3.15
Luna, xc. or., E. Peycke Co.	4.35
Beach, sd., McG. & W.	3.45
Pointer, A. C. G., Glendora	4.65
Aurora, fy. or., E. Peycke Co.	4.95
Lone Palm, xc., McG. & Willard	4.15
LEMONS—	
Golden Sceptre, or., Rialto O. Co.	3.65
Redskin	3.05
Coyote, O. K. Exchange	2.85

CHICAGO, Monday, Aug. 8.—Lemons sell well and ruling steady. There are good offerings. Boxes, California choice, $5.25@5.50; extra choice, $5.75@6.00; common, $4.50@5.00.

Oranges—Remain quiet. Offerings are light and are held steady. Boxes, late Valencia, extra choice, $4.25@4.50; choice, $3.25@4.00.

Baby Chicks, Laying Hens, Pullets, Etc.

On hand every day of the year. Free 32-page catalog gives prices, descriptions, etc. We ship to every town in the West. Our prices are lower than any other dealer, as we buy more and sell on less margin of profit. We can fill orders for White and Brown Leghorn hens, 10 months old, Barred Rock, Rhode Island Red and Black Minorcas 10 months old. We have Black Minorca, Rhode Island Red and Buff Orpington pullets 2, 3 and sometimes older. Send today for catalog. State what you wish—kind, age and quality, and we can name the price.

We can fill orders for Reds and Barred Rock chicks every Tuesday at present.

Pioneer Hatchery Co., 112 E. 8th, Los Angeles

Horticultural Building and Grafting Shed, University Farm.

OUR SPENDTHRIFT REPUTATION.

The Montreal Star throws a sidelight upon Canadian relations with the United States in an article on reciprocity and conservation. Referring to negotiations said to be progressing favorably between the dominion government and Belgium and Italy for trade agreements, the Star says frankly that the advantages of trade with the United States are obvious because of the proximity of the two countries, their mutual trade needs, and the nearness of markets. It concedes that immediate gain to Canada is likely to be greater from trade with the United States, but it turns from this aspect of the case to consider the advantages of trade with Belgium and Italy, which it regards as none the less important for being less obvious. It notes the fact that "immediate trade gain and the welfare of the Dominion may be two very different things." And here is the interesting point of the argument to us on the south of the Canada line:

"One of the outstanding needs of Canada is capital for the development of her resources. We are likely to obtain that capital from countries with whom we do a large trade. The capitalist will bring with him the method of development to which he is accustomed in his own land. The American capitalist has wasted his own resources and he is not likely to conserve ours. The European capitalist—the capitalist of Belgium, of Italy, and in a high degree of Germany—has learned well the lesson of conservation. If we can secure the development of our resources by European capitalists, we will be likely to get a development which will guard the interests of future generations and enrich instead of impoverish the country. If we give the American free scope, he is likely to land us where he has already landed his own nation. These are strong and far-reaching reasons why we will do well to encourage the European trader to come among us and bring in his wake the European Capitalist."

Does this argument seem overdrawn? It must be remembered that Canada views questions sometimes in a large way and looks deeply into things for causes and effects. It has often happened that her policy has been directed by visions of imperial development, and we know that on the subject of conservation, while Canada may not be talking as much as the United States, she is taking positive action in many directions, notably in that of forest protection.

The viewpoint of the Star is especially significant in its exposition of the fact that we are looked upon from outside as an extravagantly wasteful people whose methods cannot be trusted. Of course, we are disposed to reply with a loud patriotic flourish, accompanied by the eagle and the flag. But perhaps it will be more profitable to sit down quietly and consider the reasons for our neighbor's opinion of us and its probable effect upon our standing as a nation. —American Forestry.

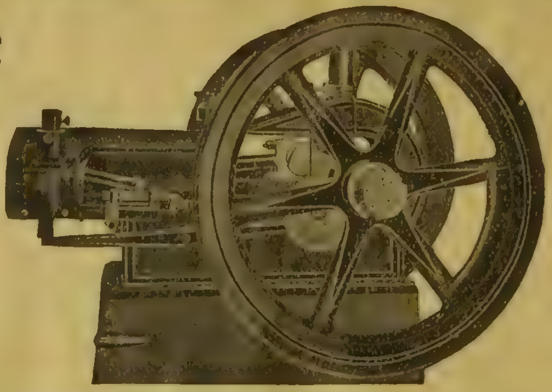
Every city, village, and country town should be liberally supplied with drinking fountains for animals, and they should be so constructed that even the smallest dog can drink from them. The person who provides a fountain at which man and beast can drink pure water, is truly a public benefactor.

"My life," sighed the insurance agent, "is full of wormwood and gall." "Is that so?" asked the victim. "Funny I overlooked the wormwood!" —Cleveland Leader.

"Search diligently into the truth, rather than suffer an erroneous impression to pervert your judgment." —Phaedrus.

Business Notes

Attention is called to the new advertisement in this issue of Dr. R. R. Snowden. The Doctor's work is a departure from the routine "complete analysis" of the soil, and is more useful although costing less, since it has a direct relation to both the immediate and permanent returns from the orchard. His article in this issue on the effects of an inadequate proportion of lime to magnesia on citrus trees is evidently the result of a large amount of work done on citrus orchard soils, and appears to throw light on the subject. If his conclusions are correct there can be scarcely a doubt of the great value of the work he has done for the citrus orchardists. It will pay you to read the ad. Mention the "Cultivator."



The Western Engine

Will keep right on Pumping Pumping Pumping

YEAR IN AND YEAR OUT.

Using least fuel
Requiring fewest repairs
Lifting most water

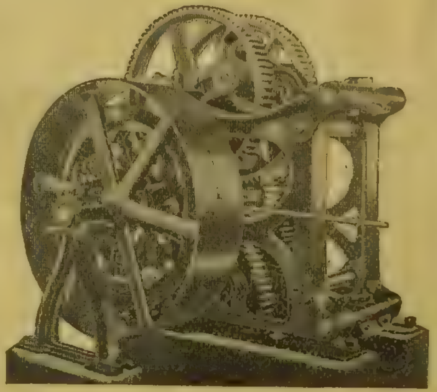
WRITE FOR CATALOGUE

Western Gas Engine Company

Builders of Gas and Distillate Engines and Hoists.
Engineers and Constructors of Power Plants of every size and for every purpose.
Sole manufacturers of the Nix-Frost Crude Oil Gas Producer, (Patented). "The Cheapest Power on Earth."

Factory and Main Office:
Los Angeles, California

Northern Branch:
San Francisco, California



The Smooth Running Pomona Deep Well Pump

RELIABILITY.

Has passed through another most successful season's run, this being the fifth since starting.

There is no experiment in buying a POMONA PUMP. All the parts have been tried out and fully perfected. They will do the work, we know, and do it well.

We have records of plants that have made three seasons' run without one cent for repairs of any kind.

ECONOMY.

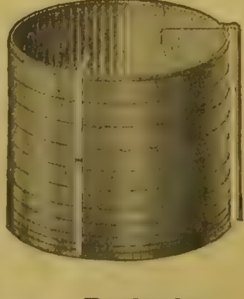
May be driven by a steam engine, gas engine or electric motor and in any case will give you the cheapest water and pay dividends on your stock.

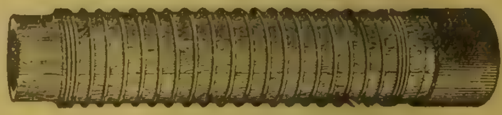
Any Water Company going into the Irrigation business will run no chances in buying the POMONA PUMP. They are built heavy and strong. All the wearing parts are Bronze Bushed or Babbited and will last a life-time with the smallest outlay for repairs.

We can refer you to customers who are operating their POMONA PUMPS for less than one-half cent per inch per hour on 200 feet lift. This is less than half what their water costs with other pumps. The same make of engine being used in both cases.

Send for illustrated catalogue to—

POMONA MANUFACTURING CO.
POMONA, CALIFORNIA





Pacific Tank & Pipe Co.

SUCCEEDING
National Wood Pipe Co.-Pacific Tank Co.

Wood Pipe Tanks

Tanks for Water, Oil, Wine, Mining and Cyanide

Wood Pipe for Irrigation, City Systems, Mining, Power Plants

Machine Banded Pipe, 2 in. to 24 in. Made up ready to lay. Continuous Stave Pipe 12 in. to 12 ft. shipped knocked down. Qnality of material unaffected by change of firm name. We can fill your orders better than ever. New pipe catalog in preparation. Place your name on our mailing list and receive valuable information free. Send for tank catalog.

FACTORIES:
San Francisco, Cal.
Portland, Oregon
Los Angeles, Cal.

OFFICES:
318 Market St., San Francisco
210 Wells Fargo Bldg., Portland, Ore.
404 Equitable Bank Bldg., Los Angeles, Cal.

Boxes and Box Shooks

Vegetable and Fruit Boxes Our Specialty

Write for Prices. Prompt Delivery. Good Goods. Right Prices.

Mercantile Box Company
231 Berry St. (Near Fourth) San Francisco, Cal.

R & V--Gregory Engine

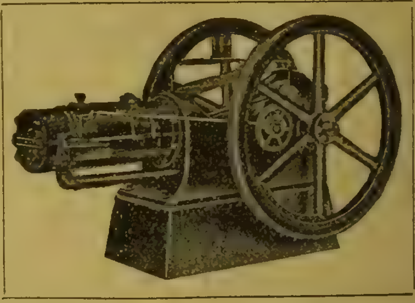
2½, 4, 6 H. P.

Just what every rancher needs to run a Cream Separator, Corn Sheller, Feed Grinder, Wood Saw, Pump, Laundry, Machine Shop, Horse Clipper and 101 other things.

Gregory Deep Well Working Head

This outfit was designed by a California man to meet the demands and conditions of California. It is sold at a moderate price and is especially adapted to the individual ranch. It is very substantial. Just what you have been looking for. Get our circular and learn more about it.

Wm. Gregory
North Main Street Los Angeles, Cal.



Not too Heavy
Not too Light
But Just Right

Send for Bulletin No. 12.

COMMERCIAL ENGINE CO.
951-955 No. Main St., Los Angeles, Cal.

More Water! Less Power!
Longer Life! Less Money!

The American Pump has come to stay because every man that is using one is boosting for it. Get our prices and our guarantee before placing orders for irrigating plants. Send us your name and we will send you some interesting catalogs.

HENSHAW, BULKLEY & CO.
262-264 South Los Angeles St., Los Angeles Cal.

Stover Distillate Engine

We install complete pumping plants.
Get our prices.

Livingston & Lee
(Incorporated)
354 So. Los Angeles St.
Los Angeles, Cal.

Write for Catalogue 15

1 to 60 H. P. Horizontal
2, 4, 6, 10 H. P. Vertical

Second Hand Irrigating Plants

Pipe, Pumps, Steam and Gasoline Engines. We have the largest A1 stock of second hand machinery on this coast, and at the right prices. Tell us what you want and we will give you our best figures. Mention this paper.

Western Machinery Company
230 Main Street, San Francisco, Cal.

California Cultivator

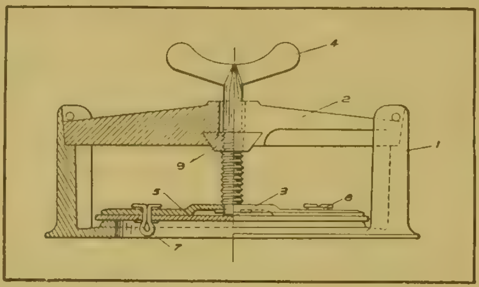
An Illustrated Weekly Magazine, Devoted to the Rural Home and Ranch. One Dollar per Year.

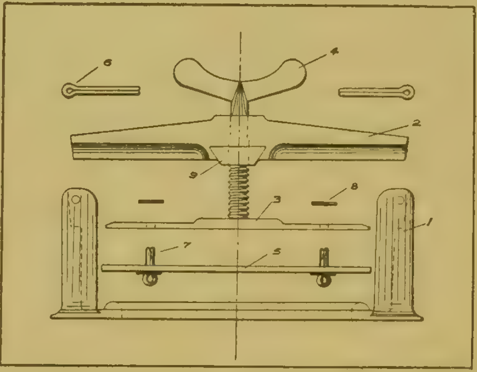
Los Angeles August 18, 1910 San Francisco

A Water Scene Near Porterville, Tulare County

Eastern Tulare County has Wonderful Scenery and with it Material Wealth in Fruits and Agricultural Products. The Waters of the Mountains are all Captured and Conducted to the Rich Mesa and Valley Lands

POMONA CIRCULAR VALVE





THE main object of the Pomona Valve is to construct a very cheap and simple valve, and one that requires no special tools or wrenches or experience to operate.

The Pomona Valve is constructed with non-corrosive parts, thus insuring a workable valve regardless of infrequent use. All fastening held in place by cotter pins, thereby making a very cheaply constructed valve and yet a very substantial one.

Valve Parts

1 Frame	5 Gasket
2 Cross Bar	6 Cotter Pin
3 Top or Lid	7 Cotter Pin
4 Brass Thumb Screw	8 Cotter Pin Washer
9 Brass Nut	

Write for Catalogue

POMONA MANUFACTURING CO.
POMONA, CALIFORNIA

FORMALDEHYDE

For The Treatment of

Potato and Oat Diseases

Its Use Upon the Farm and in the Home
WRITE FOR VALUABLE BOOKLET FREE

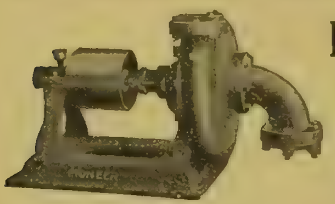
FERTILIZE YOUR SOIL

IT PAYS

LET US HAVE YOUR INQUIRY FOR PRICES

Braun Chemical Co.

San Diego — *Los Angeles* *906-910 E. Third St.* — *Bakersfield*



PIONEER CENTRIFUGAL PUMP

Will deliver water at less speed and with less power than any other pumps. Sells at a less price than any other centrifugal pump in existence.

The Pioneer is built for service and wear—made of best of iron. Our pumps are warranted and we save you money.

Agents Wanted. Write for prices and catalogue.

PEERLESS IRON WORKS, 126 O Street Sacramento, Cal.

SEED GRAIN *BLACK AND RED OATS, WHEAT, BARLEY. BEAN SCREENINGS*

for Stock and Poultry. For sale at lowest market rates. ***BRAY BROTHERS*** Buyers of Grain and Beans. Members of Merchants Exchange *220 Clay St., San Francisco*
Established in 1855 Correspondence Invited.

Pulp Versus Green Grass

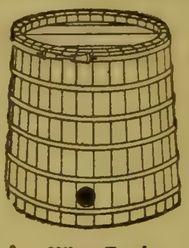
New Sugar-Beet-Pulp Galore at

Los Alamitos Sugar Factory

Price 40 cents per ton f. o. b. cars or wagons. Takes the place of green grass as a milk producer

Tanks Tanks

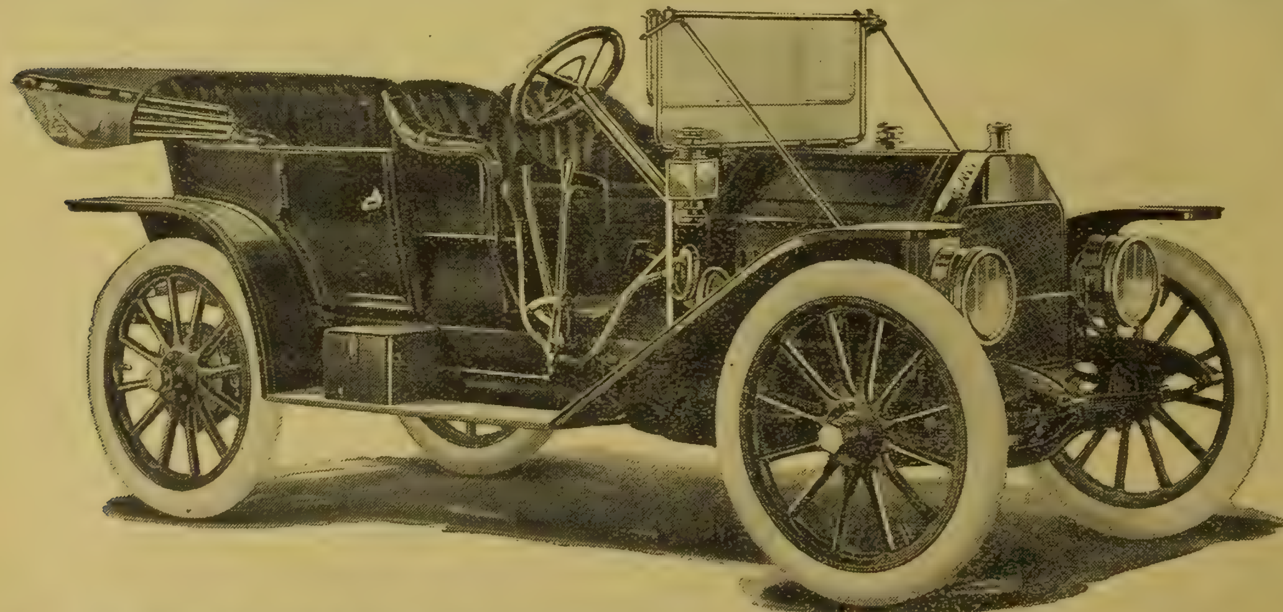
WINDELER'S PLANING MILL AND COOPERAGE


Wine Tank

GEO. WINDELER, Prop.
Water Tanks, Wine Tanks made from carefully selected stock by careful and experienced workmen. "Tanks that are well made last a long time." It will pay you to get my prices before buying.

Geo. Windeler
144-154 Berry St. San Francisco, Cal.

Water Tank



MOLINE Wins in the Glidden Tour

Did You See the Score?

Only Eleven Cars Finished, All others taken off the road Disabled. What about the MOLINE? Read the Score:

No. 1—MOLINE	19 Points	Chalmers	116 Points
Maxwell	54 "	Lexington	2,042 "
No. 2—MOLINE	64 "	Glide	2,247 "
Premier	93 "	Cino	2,414 "

Mr. Buyer--Does it Pay You to Buy the Best Car Made or Not? Think it Over.

SALESROOMS
602 to 606 North Main St. **Wm. GREGORY** LOS ANGELES, CAL.

Our 1911 Models will be in within a Few Days. Be Sure to See them before Placing Your Order.

Would ½ More Water Interest You?

With the same power from deep wells

It is accomplished with the Double-Acting

"American" Deep Well Pump

It delivers full cylinder capacity both on the **Down-stroke** and the **Up-stroke**. It requires at no time more power than the up-stroke of a single-acting cylinder of the same displacement.

Send for the most complete deep well catalogue ever issued, No. 110 just off the press, mailed free.

THE AMERICAN WELL WORKS,
General Office and Works,
Aurora, Ill., U. S. A.
Chicago Office, - - First National Bank Building.

What Fertilizer Means

Bigger Crops
Better Crops
Better Land
More Money

Why Not Try It?

The greatest farm experts in the world recommend it. Our book, "The Farmer's Friend," tells all about Fertilizers and what they will do for you. Ask for a copy. Sent free.

The Pacific Guano and Fertilizer Co.
310 Sansome St., San Francisco

WRITE FOR FALL LIST—ISSUED OCTOBER 1st

TREES TRUE TO NAME
PLACER NURSERIES
THE SILVA-BERGTHOLDT CO. NEWCASTLE, CAL.

THE SILVA-BERGTHOLDT COMPANY
180 Orchard Street Newcastle, Cal.

California Cultivator

Vol. XXXV—No. 7 Los Angeles, California, Thursday August 18, 1910 Subscription $1 a Year

Where the Gravenstein Apple Reigns Supreme

Editorial Observations on the Apple Show at Sebastopol, Sonoma County

HORTICULTURALLY California can be said to be a country of startling surprises; what yesterday appeared to be only of nominal value, today becomes a source of income to a people, and a matter to be seriously discussed in the halls of finance and in the atmosphere of trade and economics. In other words arid areas are converted into productive fields, and barren deserts into fruit growing sections. This fact was strikingly brought to mind on the part of the writer by a visit to the apple growing regions of Sonoma county, and to the splendid apple show that has only just closed in the prosperous town of Sebastopol. For be it remembered that it was not so many years ago that these same lands were thought to possess a value only for sheep ranges and grain fields.

Perfect Soils for Fruits.

For the most part the low lands of Sonoma county are adobe soil, the character veering to a sandy loam as one approaches the foothill sections. These are admirably adapted to the culture of berries and deciduous fruits, and more especially the apple,—a fruit which has been grown there more or less for twenty-five years, but has only of late years assumed a commercial importance warranted by its quality as well as quantity. To give force and tangible expression to this fact, the apple growers of that entire region have organized themselves into the Gravenstein Apple Growers' Association. And why limit their operations to a single variety? As one Shakespeare was wont to say, "Thereby hangs a tale."

A Good Apple.

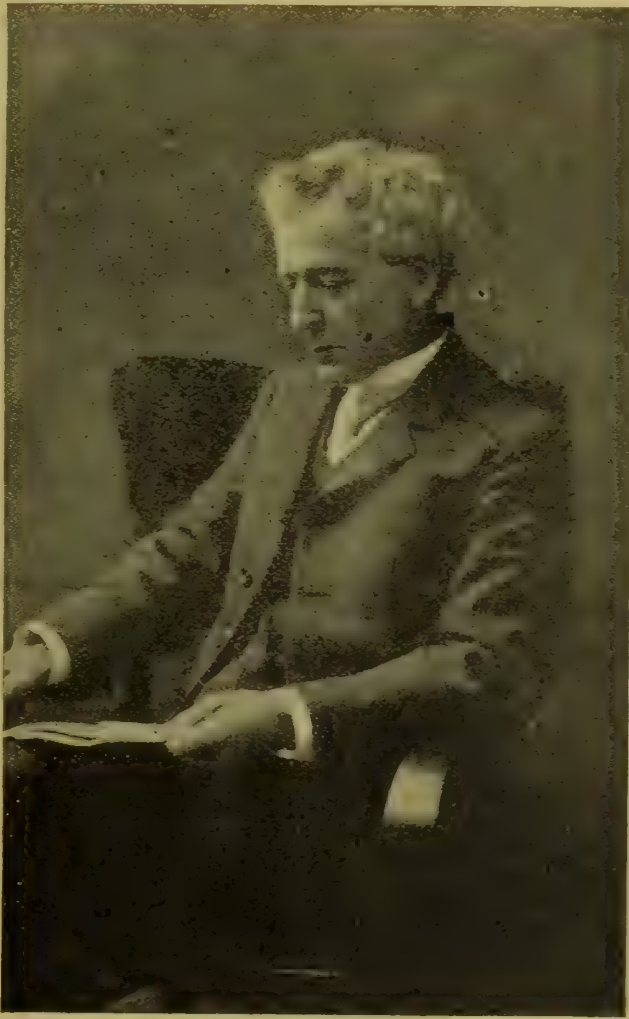
The law of the survival of the fittest and its corollary, the law of elimination, like old Father Time, rights all things. It has been found by years' experience that the Gravenstein apple is to that fruit what the Washington Navel orange is to the citrus industry, namely, the best all around apple that that region will grow. It is not only a handsome fruit, appealing to the eye, but it is a good eating apple, is a fine fruit in the culinary arts, a good dryer and a splendid shipper. Indeed they will tell you at Sebastopol that you can ship it to London and back again without injury, which of course may be as bad as sending coal to Newcastle, but it gives emphasis to a fact.

Description.

Technically the Gravenstein apple is rather large, a little flattened, a trifle one-sided and broad at the base; stalk rather short and well set; calyx large; skin from pale to deep yellow, surmounted with a reddish and irregular blush varying more or less according to the season; flesh crisp and tender, and it has an aromatic flavor at once pleasing and palatable; tree a strong grower and regular bearer. These strong characteristics have placed it in the lead in Sonoma county, where it finds ideal conditions for its highest development.

The Show.

This initial apple show was not only an agreeable surprise to the visitor from a distance, but it was no less so to even the oldest inhabitant. It is debatable if many of use realize the substantial horticultural advance that is being made in nearly every section of the state. We are quite apt to dismiss Sonoma county with the thought that she stands supreme in poultry culture, and let it go at that. But the truth is she also stands high in deciduous fruit production, especially in small fruits and apples. Her crown of glory, however, is her Gravenstein apple—a fruit that is in a class all by itself.



LUTHER BURBANK.

Sonoma County's representative Horticulturist and Plant Breeder.

Advanced Pomology.

And for this reason if for no other it was a fitting and handsome thing for her enterprising growers to initiate an annual Gravenstein apple show exploiting her pomology to the world calling attention not only to her superb product, but also to her advantages of soils and climates in the development of an advanced pomology.

Build Bigger.

But to the show proper. It was held in a tent, which should have been as large again in order to have avoided crowding and given aisle space to accommodate the throngs of visitors. All told there were shown 4000 packed boxes of fancy apples fully eight per cent of which were Gravensteins. In addition to these, there were used 1000 additional boxes for fashioning the feature exhibits. Many of the latter were strikingly original and elaborate in conception, and added much to the show as attractions, though of course in no sense possessing the educational features nor the economic values that the regular commercial displays possessed. The quality of fruit as well as the commercial packs at once gave evidence of the care and thoroughness with which the growers conduct their operations from the planting and care of the trees to the finished product as it reaches the consumer.

Other Displays.

In addition to the apple exhibits, which covered the fruit in a fresh and dried state, also preserved and cidered, there were minor displays of the stone fruits, ornamental foilaged and flowering plants, and a superb showing of Luther Burbank's introductions, which contained a number of his late introductions which have not yet been put on the market. Much of this exhibit aroused keen interest, and but for Burbank's request not to give detailed descriptions until he places the same, I would go more into details here.

The new pomology of California has much to its credit, not the least of which is the work of Burbank. Indeed, the apple show itself was due not a little to his initiative and enterprise.

In reply to the question, "Why the Gravenstein Apple," Luther Burbank furnishes the Cultivator the following:

"The Gravenstein Apple, has above all others, proved to be the money winner in Sonoma county. It is a healthy, vigorous tree. It always bears a good crop, never overbearing, as many varieties do; is of the best quality of all known apples, taking into account all uses to which the apple is put. It is the best drying apple for the quality and appearance when dried. It is handsome in appearance, good size, superior quality for dessert or cooking, and especially for market. It cannot be raised successfully in the hot valleys. Sonoma county seems to be its home. It has oft been said that if the Gravenstein apple could be had throughout the year no other apple need be grown."

The Governor There.

The show was opened on the evening of August 10 by appropriate remarks by Mayor James P. Kelly of Sebastopol, and Pres. McDonald of the Association, who introduced Gov. Gillett, who made the principal address. The officers of the Association are: J. P. McDonald, president; L. V. H. Howell, vice-president; E. E. Jewell, secretary. Directors: W. I. Newcomb, J. W. Turner, Charles Hotle, L. E. Varner, W. W. Monroe, H. R. Harbins, J. J. Alves, E. W. Maddocks, George D. Sanborn, E. E. Morford, J. P. Kelly, George McFarland, A. B. Swain and J. P. McDonell.

A list of the awards may be seen in Deciduous Department.—

Sebastopol, August 14, 1910. H. W. K.

HYDRATED LIME

1 pt. Taylor's Hydrated Lime mixed in a
3 parts best Resublimed common
Flowers Sulphur mortar box
Has given highly satisfactory results in many orange groves, gone over by several different contractors using largest power machines, as a dry spray for the

Red Spider of the Orange

Hydrated lime is the ideal diluent and vehicle for the sulphur—and reduces the cost.

$15.00 a ton net in 100 lb. Sacks. Sacks 15c extra.

W. H. TAYLOR 846 Commercial St. Los Angeles, Cal.
or
J. S. SCHIRM 4th. and K Streets, San Diego, Cal.

Orange Trees For Sale

Navel and Valencia.
J. S. Killian, El Monte, Cal.
Phones: Sunset, 8x4. Home, Red 31, or
L. C. Rice, Tropico, Cal.
Phone Sunset Glendale, 263

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FEIJOA SELLOWIANA

The Beautiful Flowering Shrub that Produces Most Delicious Fruits
Good Plants 50 cts to $2

MACADAMIA TERNIFOLIA
A Beautiful Evergreen Nut Tree $1 and $3

CHERIMOYA or Custard Apple 35 cts.

MANY RARE FRUITS and ORNAMEMTALS SEND FOR BOOKLET

COOLIDGE'S
Rare Plant Nursery
404 S. Mentor Ave., Pasadena, Cal.

Rife Automatic Hydraulic Ram

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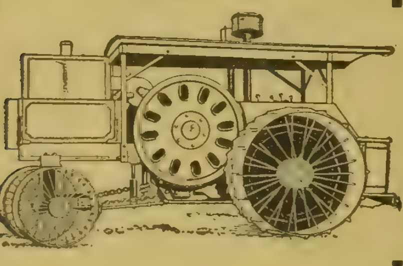

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Citrus and Sub-Tropical Fruits

BLISTERING.

BECAUSE of report that spraying for thrips had caused a scarring or blistering of young oranges in Tulare county, J. R. Norton of the Bureau of Entomology made an investigation and reports as follows:

"For the benefit of those who are vitally concerned in the control of the orange thrips, it seems that the facts regarding the particular injury which caused the article referred to above to be written, should be stated.

"On July 5th a trip was made to the Sunnyside district, where it was claimed that "a large proportion of fruit hangs on the trees badly blistered. The first orchards visited were those of Mr. Carr and Mr. Hemphill, both thoroughly sprayed with lime-sulphur and tobacco extract according to directions given by the Bureau of Entomology. Mr. Carr's orchard is situated east of the road and extends well up on the hill, where it is well known the temperature is greater than in the lower land west of the road. With the owner and Mr. Smith a careful search was made in the upper portion of this grove, but not a single orange or leaf could be found which showed any sign of "blistering," from whatever cause. Mr. Carr stated that he had seen no injured fruit on the place.

"Mr. Hemphill's grove begins a mile or so south of Mr. Carr's and extends from the road west to the canal with a block also between the canal and the railroad track. In one block of perhaps 200 trees, just across from his house and between the road and canal some damaged fruit was found. The amount can easily be estimated, and roughly, would be about 2 per cent, or two oranges in every hundred. A similar condition was found in a young grove about one-quarter mile north of this.

"At first glance it would appear that such injury occurring in fruit known to be sprayed must be caused by the spray. But this hasty conclusion was not borne out by the facts.

"In the unsprayed orchard adjoining Mr. Hemphill on the north and lying between the two sprayed blocks, where the injury was first found, some of the oranges showed exactly the same injury. No other portions of Mr. Hemphill's grove than those mentioned showed any of this so-called 'scalding.'

"A sprayed grove just across the road from Mr. Hemphill's and farther up on the hill was next carefully searched for injured fruit. Not a single orange showing even slight 'scalding' could be found. This grove was sprayed by the same men who sprayed Mr. Hemphill's, using the same outfit.

"The next grove examined was Dr. Barber's, lying further over on the east slope of the hill. A portion of this grove was sprayed during the hottest days of the month, yet no injured oranges could be found there.

"Not a single complaint of any injury that could be attributed to the lime-sulphur spray or to a combination of this spray and great heat has come to my attention from any other part of the orange district.

"However, a careful examination was made of foothill groves in the Lindsay district. In one of these lying well upon the hill east of Lindsay, the other two in the El Mirador district, all chosen because they are located in high, hot sections and were sprayed on the warmest days, not a trace of this injury could be found.

"Now, just what caused the discoloration and toughening in the rinds of those few oranges at Sunnyside, which has given us this alarm, is very hard to say. But there is good evidence that some other conditions than lime-sulphur and great sun heat must be present."

CUBAN PINES.

The following account of the pineapple industry in Cuba is taken from a report of a commission of Florida growers as printed in the Fruitman's Guide and will be of interest to our readers.

The Floridians say that the pineapple industry is confined to within fifty miles of Havana. They were first grown in the outskirts of Havana and have gradually drifted westward, the center of the old section being Punta Bravo, about twenty miles west of Havana, where they have immense packing-houses well equipped; for instance, they have nailing machines driven by electric motors, but do not have packing tables as the Cubans cut them and put them on the floors a day before packing, then one man sizes them, another wraps, another places in crate and still another nails up the crates, which seems rather a slow and expensive way to the Florida grower. The crates are made the narrow way and get a larger apple to the same size than the Florida grown pine, owing to the smaller crowns.

Cuban pines are cut instead of broken in picking the majority owing to the slips growing so close to the apple. It seems the universal price for cutitng, hauling to packing-house, packing and placing aboard cars is 50 cents per crate, and sometimes more; however, this seems to be the usual contract and cost price.

Pineapples are grown in Cuba on beds thrown up like sweet potato rows in Florida, about five feet apart and planted in single rows one foot apart on beds nearly one hundred paces long.

This is called the "Cantero" system, and from observations in different sections in experiments by Americans, the "Cantero" system is the only practical way to grow pines in Cuba, as it enables them to keep out the grass and keep dirt around the suckers so they can take fresh root each season. They plant between seven and eight thousand plants per acre by using this system so that it takes two acres there to make one in Florida. The actual cost of plowing, buying of plants and setting is about fifty dollars per acre, the price paid in contracts the past season.

About three years is the average life of a field, the third crop very often being very small apples unless the field is well kept.

Some are using fertilizers as an experiment, but it does not seem necessary nor profitable. All the growers claim they can and do replant their ground again and again, some claim with better results.

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Mr. Orchardist

I do not advise a complete analysis of your soil. This is the work that is responsible for the doubt now cast on the value of soil analysis. I will determine the

Chlorine, Alkali,
Total Soluble Salts,
Phosphoric Acid,
Potash, Lime, Magnesia,
Adequacy or Inadequacy
of Humas and Nitrates;

and these determinations will have reference to the materials now subject to the use of the plants. I will also give a mechanical analysis of the soil. This is all that is necessary to know for practical purposes and is much cheaper than a complete analysis. If the orchardists realized the profitableness of this information to them, everyone would want this work done at once.

R. R. Snowden
Chemist and Soil Engineer
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Valencia Fall Buds

2 to 3 feet high on sweet or sour stock.
Also Navels and Lemons for 1911
Smith & Clark Co.
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Owens Valley Land
See Announcement on Page 16

The new section around Artemisa was visited, which is about fifty miles west of Havana. From this station will be shipped probably one-half the island pine crop during the coming season. There are some extensive pine fields at this point. The pineapples are large in size, mostly 18s and 24s.

From the facts ascertained from various growers the cost of producing a crate in Cuba, ready for shipment is about eighty-five cents, as against one dollar in Florida.

In conversing with large and small growers they claimed to have averaged from eighty-five cents to one dollar and ten cents the past season. The average price realized seemed to be one dollar. A great many were sold in the field at from fifteen to twenty-five cents per dozen, according to size, distance from the packing house and whether cut by owner or buyer, realizing about fifty cents per crate from such sales. The growers who did this feel like the fellow who sold for one dollar and a half f.o.b. in Florida. The best information seems to be that there will be no radical increase on the island output this coming year, but will be about the same as the past season—one million, three hundred thousand crates.

The trial shipments over the Florida East Coast Railroad the past season were very satisfactory and the percentage damaged greatly reduced, as they normally expect a ten or twenty-five per cent loss en route by steamer. The loss has been reduced to less than five per cent by the Florida East Coast route, and it looks like a very serious matter to Floridians already, much more so when the extension is completed and in operation.

The gentlemen are more firm in their belief than ever that equal rates are necessary with the Cuban grower in order to compete with them. By being given those rates there will still be money in the production of pines for the Florida grower.

The pine crop in Cuba is grown, packed and shipped by Cubans. Americans did not ship 30,000 crates the past season—prospects for not over 50,000 crates the coming season. For various reasons they cannot meet the Cuban competition there.

If the American grower in Cuba was all there was to fear, the Florida grower's prospects would be bright, but the Cuban understands his branch of trade.—Porto Rico Horticultural News.

THE PONDEROSA LEMON.

This truly ever-bearing variety produces lemons of remarkable size. The trees are strong and healthy, easily cultivated and enormously productive. They bloom and bear fruit when quite young. The flowers are pure white, with yellow stamens, and as fragrant as orange blossoms. The beautiful foliage is thick, glossy, and resists insect attacks admirably. A tree of this sort, covered with masses of flowers and large, handsome lemons is excellent for culinary purposes. Usefulness and beauty are combined in a high degree in this remarkable plant. So say the catalogues—especially of California—that are exploiting this lemon, which is all that is claimed for it except that relating to its culinary qualities. It is too large to come into general use. The writer has grown it for years and there is no demand for it in Florida. The good housewife takes the rough lemon or the regular lime in place of it, while scores of four-pound Ponderosas hang on the bushes until they rot and drop to the ground. In pots it is to be commended, but for general use it is useless.—Florida Fruit and Prod. News.

* * *

Possibly California nurserymen are "exploiting" this worthless lemon but we are not aware of it.

PROTECTION OF YOUNG CITRUS TREES FROM COLD.

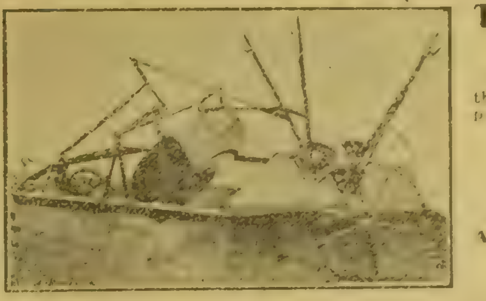
The Agricultural Gazette of New South Wales in a back number describes an excellent method of protecting the young citrus trees from the cold. "To begin with, the branches are drawn together, and tied with binder twine, but not so tightly as to preclude a free circulation of air. A small trench is made around the base of the tree, in which are placed the butt-ends of sorghum or corn, the leaves being then spread loosely around the tree, not so closely, however, as to smother it. All that is required is just sufficient to protect it from frosts, and if covered too closely it might smother and kill the tree. Then tie about fifteen inches from the ground, and again near the top. It will be observed that a portion of the leaves can be seen through the covering; there is, however, little danger of this foliage being damaged, as the sorghum will protect it all right, and, as before stated, trees should not be covered too closely. After the sorghum is tied with the two ties a little earth is thrown around the base to assist in holding the covering in place."

In Florida it is usual to bank soil around the trees up to the first branches in order that enough of the tree will be left to bud upon, in case of a severe freeze that would kill the tree back to the ground.—Florida Agriculturist.

WILD FLOWERS IN ITALY.

The wild flowers abound, old friends from home and lovely relatives—a campanula almost as big as a Canterbury-bell, buttercups, pink yarrow, grape hyacinth, orchids, pink mourning-bride, wild monkshood and larkspur, thrift, forget-me-not, ladies' delights, marguerites, Queen Anne's lace, St. John's wort, tiny red lilies, a light pink clover with loose lovely heads, a yellow flower gone to seed in a frosty rosette the color of the mimosa bloom, white anemone, cow wheat, alpenrosen, edelweiss, pinks, thyme, cinquefoil, stonecrop, yellow vetch, marsh marigold, and saxifrage. And down toward Canazei, great slopes of firewood are burning in the sunset glow. And from the big veranda, where the dinner is spiced by the mystery of Hungarian goulash, you see over the cold mountains two rosy clouds in the green sky, and between the clouds a star. Canazei is clear and cold, sparkling under stars or sun. One morning you are ready for the diligence at seven, but before you can mount to your lawfully secured seats two elderly German men, each in a hooded cloak, dry-as-dust scholars, out of a play, scramble into them like hurried little animals, and settle themselves with an "Ach, so!" But they are invited to scramble out straightway, and sorrowfully do it.—Alice Brown, in Harper's Bazar.

Dixon Iron Works



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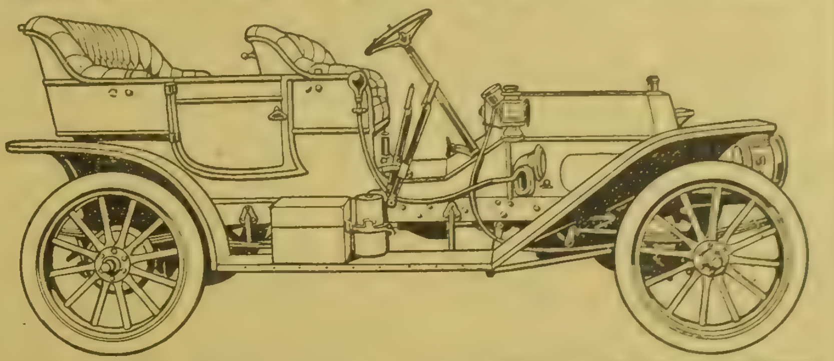

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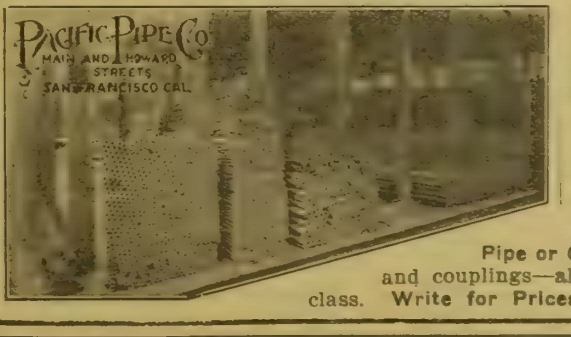

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Deciduous Fruit Culture

AWARDS AT SEBASTOPOL.

THE selection of judges for the Gravenstein Apple Show was by unanimous consent left to State Horticultural Commissioner J. W. Jeffrey, who was an interested and enthusiastic visitor. He appointed Messrs. Whitney, Black and Maskew, who, after careful consideration made the following awards:

Feature Exhibits.

Locomotive, Huntley & Morse, first prize.

Pleasant Hill, dryer, second.

W. H. Baker, windmill, third.

Hotle Brothers, "Gold Ridge" orchard, fourth.

Forestville School House, fifth.

E. Moll, apple tree, sixth.

W. I. Newcomb, "Old Oaken Bucket," seventh.

Green Valley, depot, eighth.

Stony Point exhibit, ninth.

Boys' and Girls' Aid Society, tenth.

Analy Bank, eleventh.

Courthouse exhibit of Mrs. J. P. Kelly and Mrs. G. D. Sanborn, twelfth.

E. H. Smith's five pointed star, thirteenth.

V.ne Hill District, American and bear flag design, fourteenth.

Honorable mention—Mrs. M. R. Crystal and George A. Corley.

The exhibits of the two local banks were not entered for prizes, but both were awarded special diplomas.

Apple Exhibits.

Best apple exhibit from one tree—H. R. Harbine.

Best apple exhibit seven varieties, I. W. Turner, first; Mrs. L. E. Barlow, second; Kauffman & Arnold, third.

Best apple exhibit, five varieties, Forestville, first; Pleasant Hill, second; J. W. Turner, third.

Best apple exhibit, three varieties, W. N. Couch, first; J. W. Turner, second; Mrs. L. E. Barlow, third.

Best arranged boxes, not less than 10 boxes, W. H. Baker, first; A. O. Scammon, second; Y. Fugii, third.

Best display of apples in plates, Ida S. Hunt, first; Mrs. Turner, second; Mrs. H. Briggs, third; H. Ballard, fourth; Frei Brothers, fifth; S. A. Banks, sixth; Mrs. Barlow, seventh; G. C. Armsbee, E. H. Smith, eighth and ninth.

Best exhibit of apples in basket, Mrs. Ida S. Hunt, first.

Best exhibit from one district, Stony Point, first; Vine Hill, second; Forestville, third.

Juvenile section, M. T. Ross, first; W. H. Worth, second.

Best exhibit of horticultural and agricultural products of the farm, W. S. Liddell, first; Ben and Bell woodworth, second; Frei Brothers, third.

Best exhibit corn on stalk, Anton Francisco, first; P. W. Bussman, second; V. A. Dorward, third.

Apple packers' entries—Garcia-Maginin Company, first; Earl Fruit Company, second; Hunt, Hatch & Co., third.

Apple growers' entry, Ida S. Hunt, first; Vine Hill, second; Mrs. Cadwell, third; S. C. Morse, fourth; M. R. Crystal, fifth.

Best grain in sheaf, Knowles & Stark, first; Pleasant Hill, second; Frei Brothers, third.

Best display of potatoes, Carl Wilson, first; W. K. S. Liddell, second; I. T. Ward, third.

Best display of vegetables, W. S. Liddell, first; Mrs. L. E. Barlow, second; M. A. Pacheco, third.

Best display of pumpkins, Analy Bank, first; W. S. Diddell, second.

Best display of berries, Mrs. L. E. Barlow, first; Mrs. M. R. Crystal, second.

Best display of fruit in jars, jellies, Mrs. George Ross, first; Mrs. L. E. Barlow, second; H. Briggs, third; Mrs. Henschover, fourth.

Best display of cut flowers, first prize and recommendation for a gold medal, Thomas J. Butts; E. E. Smith, second.

Window display, George McFarlane, first; Mrs. M. A. Jackman, second: E. E. Moll, third; Stellings Grocery, fourth; Crawford & Son, fifth; Weeks & Robinson, sixth; W. H. Bailey, seventh.

Best display prunes and pears, W. S. Liddell, first; Mrs. Kate Walsh, second; Mrs. Cadwell, third .

Best arranged exhibit of pears, W. S. Liddell, first; Mrs. Turner and Mrs. Cadwell, second; Mrs. L. E. Barlow, third.

Canners' exhibit, Central California Fruit Canners' Association.

Dried fruit, evaporated apples, Y. Fugi, first; Pleasant Hill Orchard Company, second.

Luther Burbank's exhibit, complimentary gold medal.

Special prize offered by George P. McNear for the best individual exhibit, Mrs. Laura E. Barlow.

Apples in glass case, J. J. Alves.

Eight boxes of peaches and two of oranges, J. J. Alves.

Peaches in wire baskets, J. W. Turner; first and second prizes.

Eight boxes of peaches, A. R. Thomas.

Best individual packers, T. J. Jones.

Peaches, six boxes, P. H. Peterson.

Dried berries, Mrs. L. E. Barlow.

Peas, Mrs. J. R. Rosie.

Turnips, D. F. Hampton.

Eggs, Sonoma County Fruit and Produce Company.

Condensed milk, H. M. le Baron.

Tobacco plant, W. E. Collins.

Big blackberry, Mrs. M. R. Crystal.

—H. W. K.

Sebastopol, August 14, 1910.

It is claimed the Texas peach crop this year will amount to between 1,500 and 2,000 carloads.

OUR NEW CATALOGUE WILL INTEREST YOU
SEND FOR IT
Leonard-Coates Nursery Co. Inc.
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HARVEY BOLSTER SPRINGS
Soon save their cost. Make every wagon a spring wagon, therefore fruit, vegetables, eggs, etc., bring more money. Ask for special proposition. Harvey Spring Co., 737,17th St., Racine, Wis.
FREE TRIAL TO YOU

Owens Valley Land
See Announcement on Page 163

THE GRAVENSTEIN APPLE.

This is an apple of good size, attractive appearance and excellent quality. For culinary purposes it is perhaps unexcelled by any variety of its season. It often sells at comparatively high prices. It comes into bearing moderately early, is productive and a reliable cropper. The crop ripens during a period of several weeks hence should have several pickings. Beginning about the middle of August in Northern California it continues in season till late October. When properly handled a considerable portion of the fruit may remain apparently sound much later than this but the color fades and the quality and flavor are apt to deteriorate. As compared with other varieties of its class it stands up well in good dry cold storage and is a splendid shipper. Its cultivation in commercial orchards is increasing in northern sections of the state, particularly in Sonoma county, where fruit growers find it a desirable apple for both domestic and foreign markets.

THE EVER POPULAR "GRAVENSTEIN" APPLE.

WORTHLESS FERTILIZERS.

MY attention has from time to time been drawn to articles in papers and periodicals and to advertising literature, concerning the alleged value of various naturally occurring rocks and mineral deposits as fertilizers. Such of these as I have been able to investigate have been found totally without merit; and investors either in the material or in the stock of companies designed to exploit the deposits, run grave risk of financial loss.

It should be pointed out in the first place that few materials of this kind have any agricultural value, until they have been refined as in the case of nitrate or potash deposits, or so treated as to convert comparatively inert constituents into a form that will admit of their being taken up by plants, as in the case of phosphate rocks. At the present time the raw material for the manufacture of nitrate of soda is found in Chile; Germany, furnishes the potash deposits; and the phosphate rocks suitable for manufacture are found in Northern Africa, the Southeastern States and in a section comprising the southwestern part of Wyoming, the southeastern part of Idaho and northern Utah. Up to the present no local deposits of any of these materials have been extensively utilized for manufacturing purposes. And so far as I am aware, no such local deposits of sufficiently high grade have been developed to enter into competition with those from the above mentioned sources.

The idea has frequently been advanced that certain common rocks, notably those containing potash feldspar, should be of value as fertilizer because of their content of potash. When we consider the relatively stable and inert character of the complex silicates and the further fact that these are already present in large quantities in natural soils, it is difficult to see how applications of such materials would result in any immediate or important crop increase.

The well known fact that lava rocks have frequently broken up into fertile soils within a very limited period is used as an argument to prove that lavas should make a good fertilizer. This, however, does not follow. A mineral fertilizer to be worth the cost of application should contain relatively large amounts of one or more of the so-called "plant foods" in a comparatively easily soluble condition. To furnish an amount of actual potash equivalent to that in an ordinary application of sulfate of potash would require a relatively enormous quantity of ground lava of average composition. In addition the condition in which potash, the essential constituent, is combined with the other rock constituents is such as to justify little hope of its being utilized by plants within a reasonable period of time. Potash insoluble in water, as it occurs in such materials has no standing among reputable agriculturists nor under the laws of the several states.

Exploiters of worthless materials seem to have two methods of working; one is by the use of testimonials from real or fictitious persons who are supposed to have used the substances with advantage, the other is by the quotation of chemical analysis. The first is subject to all the abuses of a patent medicine testimonial and in the second case the uninformed investor is awed by an array of figures which he does not understand and cannot interpret. Furthermore the layman is apt to be impresse by the reputation of the chemist wh made the analysis. This is a grav error because reputable chemists fre quently make analyses of samples o material, the source of which is un known to them. It is, accordingly easy to quote a correct analysis of high grade sample as applying to lot of goods or deposits which they d not represent. Even well intentione persons in taking samples tend select the best specimens and fail realize that these may not represen the deposit as a whole.

The purchaser of materials inten ed for use as fertilizer should u derstand that the sale of fertilize in California is regulated by law and licensed by the state. All legitimate fertilizer manufacturers and dealers, handling goods not licensed by others ,are registered with the Fertilizer Control of the University of California. For their own protection consumers should see that all goods purchased by them bear the name and registry number of the manufacturer. Attempts to sell unregistered and possibly worthless materials should be reported to the Fertilizer Control.

The prospective purchaser of stock in companies designed to work mineral deposits should bear in mind that with the exception of high grade gypsum, there are few naturally occurring minerals which can be profitably applied directly to the soil as fertilizers even when finely ground. The manufacture of fertilizers is a complex business, requiring technical skill and for most classes of goods considerable capital. No person should buy stock of such companies unless he is absolutely sure of the skill and integrity of the promoters and has expert advice as to the suitability of the proposed raw material as a constituent of fertilizers.—John S. Burd, Chemist in Charge, Fertilizer Control, University of California.

Courtesy Porterville Chamber of Commerce.

APRICOT DRYING IN TULARE COUNTY.

APPLE PRODUCTION.

We recently conversed with a well-meaning gentleman who criticised us for advocating the planting of more apple orchards, using the argument that farmers cannot sell the apples they are now raising, says the Mirror and Farmer. We do not care to go into the question of why farmers are unable to sell their apples, as we believe every well informed person knows that the fault is not in the market, but in the method of growing and offering the fruit for sale. We are more concerned with the question of whether or not there is much danger of overstocking the market with first quality apples, the only grade of apples that claims the serious attention of the market.

It will, doubtless, surprise a great many people to learn that the production of apples of all kinds, good, bad and indifferent, has greatly diminished during the past few years. Production has decreased while at the same time the population has increased. For the five-year period, 1900-1904, the average annual production was 43,680,200 barrels. The period 1905-1909 the annual production declined to 27,480,000 barrels, a net decrease over the former corresponding five-year period of 16,272,200 barrels, or 37 pér cent. This does not prove that apple eating has become unpopular. In fact, we need only to cite figures compiled from the export trade to prove that prices have increased rather than decreased. For instance, the average export price per barrel for apples in 1903-1905 was $2.46, while for the following three-year period, 1906-1908, the average price was $3.18 per barrel. It would appear from the above that the increased demand of the home market has advanced the price of the export trade. Certainly the foreign market would have no occasion to pay more for American apples than apples were bringing in the home market. The falling off in production has had a decided effect upon the volume of our exports. In 1908 our apple export was 968,717 barrels less than in 1904, the year that marked the maximum trade in apples shipped to foreign ports.

In view of these figures it is evident that we shall need to increase our apple production more than 16,000,000 barrels in order to bring it back to tne point reached in 1904, and this without taking into consideration the increase of population during the past six years. We are unable to give figures covering the item of increase in population, as the census returns have not been compiled, but it is safe to assume that our population, at least calculation, is increasing at the rate of two millions a year and in all probability in excess of that.

The statistics of apple production do not make a distinction in favor of first-class apples. The figures covering production include all grades of apples; hence, as the era of scientific culture is yet in its infancy, there will need to be an enormous increase in the production of first-class apples before the supply will equal the demand. Old, neglected, pest-infested trees are going down in legions, which will make room for extensive practice of scientific culture without seriously impairing the present demand. Also, it must be borne in mind that a commercial apple orchard requires ten years to come into bearing, and in the meantime there will be from twenty to thirty million more people to consume apples at the end of that period.

In our opinion the time is favorable for the extensive planting of apples, because there are no indications in sight that the market will be overstocked for years to come. One need only study the figures covering present production and export to convince himself that we are a long way short of supplying present demands, let alone the demands of an ever-increasing population.

BUDDING PEACH TREES.

Budding can be used to propagate plums, cherries, apples and pears, but it is used most commonly with peaches. The operation is very simple and is easily performed.

If a man wished to start an orchard of budded peach trees, he would plant seeds of any strain which is hardy in his locality. Near the end of either the first or second season's growth he would bud them. Peaches are usually big enough to bud during the first season of their growth, while with cherries, plums, apples, and pears, it is better to wait for the second season.

Budding is simply a form of grafting, only it is done usually during July and August instead of in the spring. From the middle of August to the first of September is a good time to bud peach trees. During late summer the bark is loose and it is easy to separate it from the wood and insert the bud.

Buds are got from good, healthy trees of the variety desired. What are known as bud sticks are cut from healthy wood of this year's growth. The buds with bark attached are cut off this stick in the shape of a shield; it is a good plan to leave the petiole of each leaf attached to protect the bud and to act as a handle. A T cut is now made in the bark of the stock on the north side, two or three inches above the ground. The flaps of bark are separated from the wood, the bud is pushed in, and the flaps are bound together with raffia over the edges of the bud.

Late in the season the raffia should be loosened to avoid girdling the tree and the stock should be cut off an inch or two above the bud. The next spring all buds other than the one inserted must be rubbed off. With all nourishment thus directed to it, the inserted bud makes a very rapid growth.—Wallace's Farmer.

It is a good and safe plan to sojourn in every place as if you meant to spend your life there, never omitting an opportunity of doing a kindness, or speaking a true word, or making a friend.—John Ruskin.

Strong, Vigorous and Thrifty Walnut Trees

Well grown, true to name, and ready for immediate planting; of the New and Popular Variety, the

Placentia Perfection Walnut

A prolific and regular bearer of large, meaty, fine-flavored nuts, commanding from 2½c to 5c per pound more than the ordinary soft shells.

Choice trees, 3 to 14 feet, from 20c each and up; special low prices on lots of 200 and over. If contemplating planting a walnut grove, it will be to your interest to correspond with us at once, as the stock is limited and the price sufficiently attractive to clean it out quick.

Write today.

SAN DIMAS CITRUS NURSERIES R. M. Teague, San Dimas, Cal.

DON'T WORRY ABOUT FROST

Our successful demonstration at Pomona on July 14, 1910, convinced all the growers that our ORCHARD HEATER will do the work of protection perfectly. Our heaters at the Pomona demonstration burned 7 hours 15 minutes and raised the temperature 9 degrees. A heavy wind was blowing at the time, a condition you don't have when you have frost.

It Was Our Heater that Saved the Crops in Colorado

We Were the First to Make Orchard Heaters We Are the Pioneers

We will demonstrate in competition with any other heater in the world

OUR HEATERS PRODUCE NO SOOT.

We will guarantee our heaters to be the cheapest to burn and cost only 20 cents each. Five quarts of oil in our heater will burn from 6 to 8 hours.

ORDERS FOR OUR HEATERS MUST BE HAD IMMEDIATELY OR WE CAN NOT GUARANTEE DELIVERY

We will gladly demonstrate our heater at any time and for anybody that needs them. We are the only Orchard Heater concern that will give the grower a practical demonstration and furthermore we will demonstrate against any other heater to show that our heater is the BEST.

THE FROST PREVENTION CO.

107 South Broadway, Los Angeles, Cal.
218 Haight Street, San Francisco, Cal.
FRESNO, CAL.

If you are interested in frost prevention, write us and we will give you full particulars.

MILK COOLERS

See our
Weber Cone Coolers
Sanitary and Durable
Only $3.00

Weber Tubular Coolers
$30.00 up

Will cool 50 gallons of milk per hour to within three degrees of temperature of water.

Star Copper Coolers

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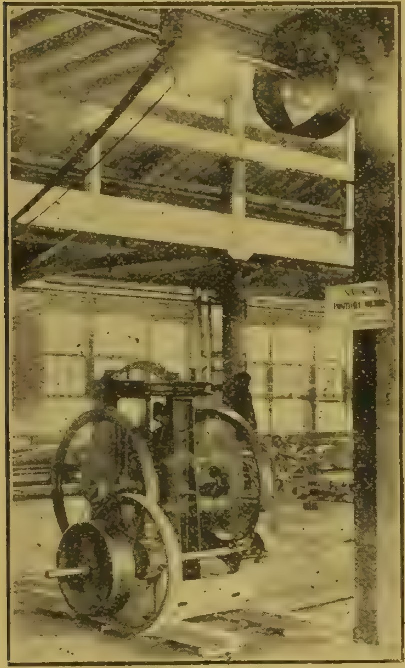
The Luitwieler Non-Pulsating Pumping System



Best For Deep Well and Irrigation Work

Pump Talk Continued:

The cam principle is now universally conceded to be the most perfect mechanism for lifting water from deep wells or against pressure. Luitwieler Pumps are the result of long years of experience and embody the perfection of the cam principle. The mechanism is balanced and all pumps are tested for smoothness of operation before leaving the factory.

The cut shown here is that of one of our 18 inch Double Geared Pumps, being driven by only a ½ inch belt lace. The weight of the revolving parts is 3200 pounds. This test is not possible with any other type of pressure pumping mechanism, not even the much advertised Triplex.

Luitwieler Pumps are in a class by themselves. 32 years of experience in Los Angeles with pumps and irrigation. Send for our catalogue.

LUITWIELER PUMPING ENGINE CO.
Los Angeles, Cal.

Our Agents:
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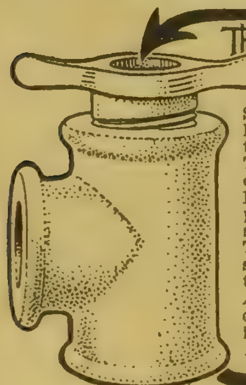

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Simple in design and construction, costs less and will last longer than any other on the market.
The Tee Irrigating Valve is made of an ordinary malleable iron T with a brass plug. It is designed for those who want an inexpensive irrigating valve, especially where such valves are needed in large quantities. There is nothing to get out of order. It is so simple you will wonder why it was never thought of before.
A ½-inch valve sent post paid upon receipt of 40 cents. Quantity price, circular and full information upon request.
Address **George C. Roeding, Fresno, California**

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Live Stock and Dairy

Dairymen and stockmen are requested to write of their experience. Mrs. Sherman is always willing to answer queries and this, with experience of other workers, will make this department of greater value.

TESTING THE HOME HERD.

By Mrs. Minna E. Sherman.

After finishing the testing of the herd on the other ranch we turned heartsick when we looked over the registered herd at the home ranch. We began by testing them as fast as we could and within a month had them finished. This was possible because the cows were bred to come in during the fall, and those that had freshened could be tested at once and the others came in two, three or four daily. The herd has been tested eleven times now and we feel sure that it is free from disease.

1896—208 head tested, seven condemned. 1897—231 head tested, four condemned all heifers with first calf. 1898—219 head tested, two condemned, a heifer and a yearling bull. 1899—219 head tested, none condemned. 1901—entire herd tested, none condemned. 1902—none condemned. 1903—entire herd tested, none condemned. 1904-1905-1907-1909—all the herd tested and none reacted. Surely this was cleaning up a herd from tuberculosis completely.

Sanitary Improvements.

Now I cannot believe that tuberculin has played the mischief in the herds that is claimed in article quoted Aug. 4th. Encysted tubercles in the human family lie dormant for years and then once in a while come out into active life. There is always that danger of their taking on activity when the body is weakened. Human beings can guard themselves while cows cannot and I would not care to risk having a cow that might be throwing off the bacilli in the herd. I would rather throw her away at once. A registered herd costs too much money to risk anything like this occurring. Then too, a breeder's herd must be like Ceasar's wife, above suspicion. I think we have cleaned up a herd from tuberculosis and I know others believe that they have done the same. I wish I had power to make every one feel the necessity of doing this.

Reinfection.

These cases confidently quoted, I should regard as reinfection. This reinfection we guarded against most carefully by building a new barn on clean land that had had a wine grape vineyard removed from it. The old cow barn was used for colts and mares. The old pasture was plowed up and new, clean land sown to alfalfa for the cows. Then the manure was taken away every day and spread on orchards or vineyards. Manure from tubercular cows has been found to carry a large number of active bacilli, and while I think under the sun of a California summer day they would probably be destroyed, back in the East with moist heat this destruction might not be complete.

Spreading Manure.

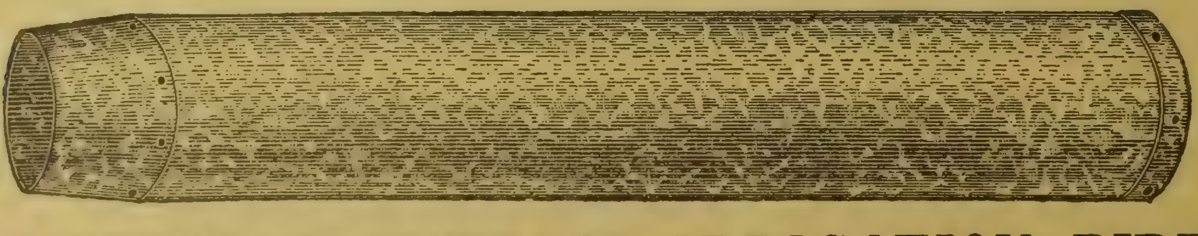
In the Orange Judd Farmer of July 23, 1910, the following paragraph appears: "Another very common error is that land is made more fertile by being pastured. Those who have studied the subject tell us that fertility of the land is increased only when concentrated weeds are fed or when top dressed with stable manure. In my own experience no investment in farm machinery has been more thoroughly satisfactory than for a manure spreader, and nowhere have the results been as immediate and as great as when it has been used on pasture land. The first rain washes it down and the cattle soon graze where the new growth has been stimulated." Now I would think some bacilli might readily escape destruction under these conditions.

Stables.

Where tubercular animals have been housed the disinfecting must be very thorough. The entire woodwork should be hand scrubbed with hot lye water and when dry, soaked with corrosive sublimate water. Over this can go the whitewash. The floors, if of boards, after being made as clean as possible, should be swabbed off with carbolized water and then soaked with crude oil thinned with engine distillate to make it absorb. The water troughs and the fences may be treated in the same way. If the buildings cannot be of cement or stone construction that can be readily cleansed, it would be better instead of expensive wooden buildings, to make the cow stables as cheap as possible and destroy them when disease breaks out.

Human Family.

The infecting of new subjects has been closely worked out in the human family and can be used as an instructive lesson for the dairyman. In New York City slums the houses that have deaths from tuberculosis have been mapped for several years. It was found that certain houses were infection centers, certain to have new cases and deaths every year among the families moving into them. No matter what the race or the previous history of these new victims, they succumbed all the same. The next house might be older and poorer from a general sanitary point of plumbing and yet be free from tuberculosis. Then modern science took hold of the matter and these houses that were white plague centers, were stripped of their plastering completely—the woodwork was disinfected and modern hard finish took



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The only scientifically constructed ***Surface Irrigation Pipe*** on the market. No round seams to leak, retard the flow of the water, or weaken the pipe. Cheaper than flumes. Easily handled. ***Will last a lifetime. The correct way to irrigate alfalfa.*** We make Riveted Water Pipe and Tanks. ***Write for illustrated catalogue.***

AMERICAN STEEL PIPE & TANK COMPANY
349 Pacific Electric Building **Los Angeles, California**

Do your cows milk hard? Send 50 cents for teat expander. O. J. Weber Co., 225-227-229-231 East Sixth St., Los Angeles.

the place of the former soft plaster walls. These houses passed off the black lists at once. Fresh air, and sanitary cleanliness, have resulted in lessening the deaths in the human family, and it can be made to stamp out the trouble in the dairy. The flies that have bred in the manure for so many years and carried the bacteria of disease to food will soon be a thing of the past. I, therefore, am so far a believer in the use of tuberculin. Even if it proves true that it starts up encysted tubercles in the cows, well and good—let us get rid of them all as quickly as possible. One human life is worth a stable full of cows.—M. E. Sherman.

STATE DAIRY BUREAU.

Replying to a request of Watson's Western Creamery for a statement of the work of the State Dairy Bureau Secretary F. W. Andreason gives outline of work done.

Owing to the fact that the appropriation was cut down for two years to the small sum of $5000 a year the work of the bureau came nearly to a standstill, formerly, and one or two inspectors could only be employed now and then and many dairies could not be inspected.

In the year from July 1, 1907, to June 30, 1908, 283 dairies were visited and rated. In the next year from July 1, 1908, to June 30, 1909, 483 dairies were inspected and rated.

The last legislature increased the appropriation to $12,500 a year and since then we have had a large force of inspectors who have worked hard. Their work has been principally devoted to bettering the sanitary conditions of the dairies and in this last year the inspectors have visited and rated 4887 dairies and creameries.

The result has been that conditions have been very much improved all over the state and a great number of good dairy buildings have been built.

We have, where no other course would avail, prosecuted over forty dairymen for maintaining unsanitary dairies and have obtained convictions in all cases but one.

Some time has been devoted to enforcing the law prohibiting the adulteration of milk, and the use of preservatives in dairy products, and we have during the year analyzed in the Bureau's laboratory, 522 samples of milk, butter, cream and cheese. Fourteen prosecutions have been brought against parties selling adulterated milk. In one case the jury disagreed, and two cases have not yet been decided by the court.

Since December 20, 1909, all samples of milk showing a low specific gravity by the use of lactometer, have also been dried out by the official method of analysis to make sure that the per cent of total solids was low.

During the year ending June 30, 1910, we have calibrated and certified to the correctness of over 2500 pieces of testing apparatus.

We have considerable difficulty in retaining the inspectors that we get started at the work.

In August, 1909, Mr. J. P. Murphy accepted a position as inspector for the Bureau. In the three months that he held that position, he accomplished so much in the way of improving the conditions among the dairies in Fresno and Tulare counties that it created great enthusiasm among the dairymen of Tulare. They became inspired to build something grand and after forming a "co-operaative company" they offered Mr. Murphy double the salary that we could pay, if he would attend to the construction and become manager of the creamery. They are now operating one of the finest creameries in the state.

A few months later one of the largest creamery companies in the state saw that one of our inspectors, Mr. J. H. Severin, was a man of great ability, experience and energy, so they offered him nearly double the salary he was getting from us. He joined them but in a few days another concern offered him still better pay if he would attend to the building of their fine creamery at Modesto and become manager of the same.

Now the dairymen of Riverdale, Fresno county, have found that our inspector, Mr. C. A. Starkweather, has accomplished a great amount of good work in the district during the three and one-half months he has worked among them as inspector for the Bureau. They decided that they would build a fine creamery, and though there were other good men anxious to get a position as manager of their creamery, they decided that Mr. Starkweather was the right and only man, and of course they nabbed him.

While it is gratifying to note that the dairymen have taken so kindly to the severe criticism often made and drastic measures resorted to by these inspectors to get the desired results it is on the other hand annoying to have them always taking our inspectors from us, and we do not know how long we can keep it up, and furnish managers for their new creameries.

SUCCULENCE FOR THE COWS.

Nothing is more sure than that after the cows have been out on the pasture a few months, the grass will begin to fail. Experience teaches us this beyond a possibility of doubt, though the failure may be delayed somewhat by rain and favorable climatic conditions.

But one result can follow this state of affairs. The milk yield will drop off materially unless we resort to some method of supplying the green feed the cows must have to enable them to hold up in their flow. No juicy food, no milk.

He is a wise man who foresees this time of dead, dry pastures and makes his plans to tide it over. Our summer seasons teach just that one lesson—we must depend upon grain or green crops for our milk flow after the pastures begin to fail, or we will surely suffer loss.

Here comes in the value of the silo. The man who has a silo well filled with corn or some other form of ensilage may laugh at the midsummer drouth. He will gather in the checks while the man who is not thus equipped will be compelled to suffer loss. The modern silos will keep ensilage perfectly for summer feeding. When the grass falls off, then open the silo and give the cows some every day. That maintains the milk flow and brings in the checks, without which no farmer can succeed.

But not all as yet have silos. What then? Then the reliance must be on fresh-cut green feed. It is not too early to make preparations for this. Whatever crop may be used for soiling, this is the time to arrange for it.

On our own farm we have had good luck with oats and peas sowed together. One-third common field peas to two-thirds oats is the proportion we use. The first sowing is made about the time we finish sowing oats for grain. Then a couple of weeks later another sowing may be made. The land for this purpose ought to be rather near the barn, so that it would be comparatively easy to slip out and cut a load for the cows. By the time the first sowing is gone, the other would be far enough advanced to begin on. Still a third sowing might be made for later feeding.

And then, sweet corn makes a fine feed for this purpose. The seed costs a little more than that of common corn, but I think it is worth enough more to pay for the difference in cost. This I would plant, not sow thick. Planted with plenty of room between the hills a good deal of ear corn may be grown on the stalks. This increases the feeding value very much. As soon as the oats and peas are gone the corn comes in to meet the demand, and this may be the plan all through the fall. It or some other plan must be adopted or we will surely be doing business at a loss on a very narrow margin.—E. L. Vincent, in Des Moines Homestead.

HOLSTEIN-FRIESIAN ANNUAL.

The Holstein-Friesian Association of America has sent out a report of its recent annual meeting held at Syracuse in June. The report contains a list of members of the association, prize winners during the year 1909-1910, and a condensed report of the annual meeting. Amongst the statistics given we note that the registered certificates number during the year 26,176, much greater than any other dairy breed. California leads in proportionate increase of membership during the year. The association starts in the new year with a balance on hand of nearly $40,000. Fred'k L. Houghton, Brattleboro, Vt., is secretary of the association.

Horses have good memories and good treatment will not be forgotten.

Sound as a Dollar

That's the way to keep your horses. It's easy to do it with Kendall's Spavin Cure. Thousands of other horsemen have done it in past 40 years.

Cured Spavin

"Two years ago, I bought a pair of fine black mares. In about six months one had a Spavin. I simply used your Spavin Cure, and cured her entirely, which mystified all the horsemen.
Yours truly,
M. S. Culver, Union City, Conn."

Letters like the above are received by us daily from grateful horsemen.

Kendall's Spavin Cure

is the only safe, sure cure for Spavin, Curb, Splint, Ringbone, Bony Growths and all Lameness. Save your horses with the old reliable cure. Leaves no white hairs or scars. It is the world's best liniment for man and beast. At druggists, $1 a Bottle; 6 for $5. Ask your druggist for book, "Treatise on the Horse," or write to

Dr. B. J. Kendall Co., Enosburg Falls, Vt.

Cream Separators, all sizes and prices. O. J. Weber Co., 225-227-229-231 East Sixth street, Los Angeles.

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No Hoof, No Horse

U. S. statistics show that 80 per cent of all horses are lame and that 80 per cent of the lameness is caused by hard and contracted feet. As a hoof softener, toughener, nourisher and grower there is nothing equal to

Eshelman's Wool Fat Hoof Healer

A horse's hoof is from 60 to 70 per cent water. Grease and water will not mix. There is no grease about Wool Fat. It mixes readily with water, is very penetrating, and while a great medicine of itself, it also acts as a vehicle to carry to the afflicted parts the other medicinal properties of the HEALER. It is absorbed into the skin and gives natural stimulation and nourishment to the hoof. There is nothing that can compare with it for this purpose, nor as a remedy for contracted hoofs, split hoofs, quarter cracks, mud fever, corns, grease heels, and for all kinds of sores and cuts anywhere on any stock. If you have tried it, you know that this is true. If you have never tried it, it will surprise you with its power as a healer and restorer. It is not a new remedy, but has been on the market in the East for many years, where it has given the greatest satisfaction.

4 oz. package, 25c; 12 oz., 50c; 32 oz., $1.00; 5 lb. pail, $2.00; 10 lb. pail, $3.50. It is easy of application. Directions with each package.

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We will send you a 2-lb. can, use it 15 days, and if satisfactory, send us $1.00. If not, write us to that effect, and you need pay nothing. We take all the risk, you just try it. Send for it today.

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We make a specialty of **Flower Seeds.** New Crop **Pansies** and **Ten Weeks Stock** are now in also. **Winter or Christmas-Flowering Sweet Peas** in variety.

EUCALYPTUS Get our prices on Trees and your requirements of seed for next season.

We have a fine stock of trees—all leading varieties.

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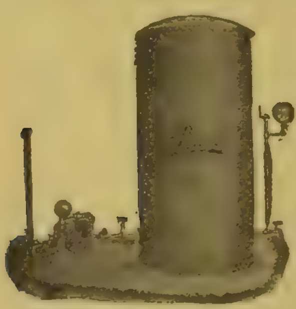

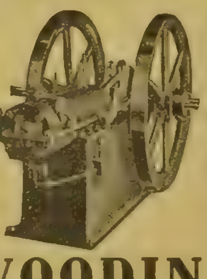

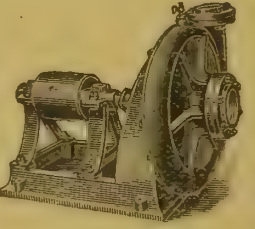

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CORN HARVESTER with Binder Attachment cuts and throws in piles on harvester or winrow. Man and horse cuts and shocks equal with a corn Binder. Sold in every state. Price $20 with Binder Attachment. S. O. MONTGOMERY, of Texaline, Tex., writes:—"The harvester has proven all you claim for it. With the assistance of one man cut and bound over 100 acres of Corn, Kaffir Corn and Maize last year." Testimonials and catalog free, showing picture of harvester. **New Process Mfg. Co., Salina, Kan.**

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Do away with old hame strap. Horse owners and teamsters wild about them. ● Fasten instantly with gloves on. Outwear the harness. Money back if not satisfactory. Write today for confidential terms to agents. **F. Thomas Mfg. Co., 723 Wayne St., Dayton, Ohio**

General Agriculture

THE PARCELS POST.

THE parcels post movement of course will meet the very powerful opposition which the express companies themselves and their allies, the railroads, can bring to bear to defeat or check and postpone its success.

To meet this a vigorous propaganda should be sustained. Primarily the movement interests and will benefit the farmer, and farmers' organizations are doing excellent work to arouse sentiment and focus influence. The Farmers' National Congress is publishing leaflets effectively presenting the arguments for the parcels post. A very timely one touches the question of the postal deficit, to which President Taft called such conspicuous attention.

The official reports of the Postmaster General, according to the leaflet, show that the average weight of mail delivered by each team or single horse wagon in the rural delivery service is only twenty-five pounds. Yet each carrier could as well carry ten times that weight. "There are more than 40,000 rural routes. Hence the carriers on these routes make more than 12,480,000 round trips each year. If a parcels post on the rural routes earned $2 for each round trip, the gain would be, in round numbers, $25,000,000 per year; and this, with some little reforms that all agree should and could be easily made, would wipe out the postal deficit. Now, taking the minimum rate proposed on the pound packages in a rural route parcels post—5 cents a pound—the carrier, to earn the $2 per trip, would be compelled to carry, not the 500 pounds that he could, but only 20 pounds additional going and coming, or a total load of only 45 pounds."

Four million families already are served by the rural deliveries and more will be served each year. Yet though the carrier passes every week day each of the 100 farmers he serves, if he wishes a package from the town, he must hitch up and go or send for it. The economic waste of this is obvious, especially in view of the fact that the carrier is now traveling with much less than he can convey.

The opponents of the parcels post are rallying the small town merchants to their aid on the argument that the post will injure him to the advantage of the great city mail order houses—a fallacious theory which is only used for political purposes. The village merchant will benefit more than he loses. This view the supporters of the post express in this way:

The bills for parcels post, confining the service to packages originating on the rural routes or in the postoffice towns serving these routes, are so drawn that this limited parcels post could not possibly aid the city mail order houses and they are all very earnestly fighting it. And it would certainly benefit the local merchants, for it would make trading with them by the rural people so convenient. The local merchants are really injuring themselves by opposing the limited, rural route parcels post; for as the farmer is now compelled to go to the village railway station to deliver or to receive packages, he very frequently takes the train there and goes to the larger town or city to buy the goods he needs. The two cents a mile railway fare prevailing in many states tempts him all the more to do this. Any close observer in the Western states where mail order trading is perhaps greatest, knows that what takes most from the trade of the local merchants is not the mail order houses—in all the United States there are only two of them markedly successful—but the low railroad fare that tempts the farmer and his family, compelled by the lack of parcels post to come to the railway station, to go on to the larger stores and possibly better prices of the large town or city. If we had a modern parcels post, often making it unnecessary for the farmer to come to the railway station, the local merchants, receiving orders from the farmers by telephone, would send out by the rural carriers millions of merchandise now bought in the large towns.

Every legitimate device that brings farm life toward the same level of convenience as city or town life is of the utmost importance to the nation. The trend of population toward the cities is not to be encouraged if the nation is to continue powerful and prosperous. The parcels post deserves the support not only of all farmers, but of city people as well, and its passage will help them both.

ALFALFA WORMS.

The alfalfa worm pest in the Imperial Valley is becoming so serious a menace that a representative of the Dept. of Agriculture, Mr. Wildermuth, is in the field investigating. Mr. Packard of the State Experiment Station staff is also in the field and these gentlemen make the following preliminary report:

"The damage done by the larvae of the yellow butterfly to the alfalfa has become so serious that it was thought best to give certain tentative results regarding the control of the pest, which have been reached so far in the investigations started this spring by both the State Experiment Station and the U. S. Dept. of Agriculture. Since the investigations looking toward the control of the butterfly have not yet gone over a single season, absolutely conclusive results can not be given. The suggestions offered, therefore, should be considered only as a probable means of handling the problem.

"The alfalfa butterfly (Colias eurytheme) is the cause of so much damage in this section of the country, because the growing period of the alfalfa extends over such a great length of time and because the winter season is so mild. The butterfly hibernates in the pupal stage during the winter months and, at the beginning of spring, those that have survived the unfavorable conditions and the attacks of their natural enemies issue as butterflies and begin to lay a large number of minute, oblong, whitish eggs on the leaves of the alfalfa. These soon hatch and later appear as the destructive green

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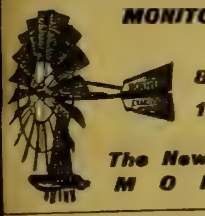

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Owens Valley Land
See Announcement on Page 163

worms, which rest on the stems of the alfalfa and feed on the leaves. In due time they pass through the regular life history and emerge as butterflies. At the present time the third brood is doing the damage to the alfalfa.

"It seems that a large proportion of the worms can be killed by cutting the second crop earlier than is the common practice throughout the valley; but since time for such action has passed, the best thing that can be done is to cut the present or future crops as soon as the worms appear in the fields, and thus not only save some of the crop affected but also prevent the majority of these worms from maturing and laying more eggs for the next brood. Many worms are shaken off in the windrow or the hay cock during the process of making hay, but a large per cent of them die of starvation, as the new growth does not come on in time to give them sufficient nourishment. The degree of success obtained by these means will depend materially on thorough and clean cutting. The shorter the hay is cut and the less green alfalfa left on the borders, ditch banks and turning rows, the less opportunity there will be for the worms to tide over this period. By irrigating with a big head of water immediately after removing the hay many will be drowned. Of course care should be taken in this case not to scald out the alfalfa. Exactly opposite to this method is one in which the field is allowed to go dry for a week or so after cutting, thus insuring the starvation of all larvae present. A number of farmers have inaugurated the practice of allowing their fields to go dry during August, claiming that they thus secure better crops the following fall. If all of the farmers of the valley would do this, the probabilities are that the crop of worms for next year would be reduced. Even if the farmers of a single locality should follow the suggestions given here, the serious conditions which now exist would be alleviated, but the comparative success depends upon the co-operation of all of the alfalfa growers of the valley.

"A certain parasite, natural to the valley, has been found in many of the fields attacking the worms, but so far has not been present in sufficient numbers to be of any great economical importance. In dealing with any fields such as this, spraying or other similar methods of procedure are manifestly impossible."

In order to be able to collect as much data as possible and to reach final results, either of the agents located in El Centro will be glad to cooperate as far as possible in helping any farmer to carry out the suggestions given or to assist him in any plans that he may have to offer. Information or other inquiries should be sent to the State Experiment Station Agent, or to the U. S. Government Entomologist, both located at El Centro.

THE OLD GROUCH!

Hawks—If a fellow marries a dairy-maid, do you think he will be creammated?

Bawks—No, he'll be married.

"Don't you think, Mary, you are too old to play with the boys?"

"No, mamma, the older I get the better I like them."—"Judge."

POISONING SQUIRRELS.

The Porterville Messenger referring to a method of poisoning squirrels followed by a rancher says:

A large number of shallow cans were procured, made by cutting condensed milk cans in half. These were filled with water and were scattered along the east side of the nursery, at a distance of about thirty feet apart. Nothing but clean water was put in them for several days. When a can was overturned or carried away, it was carefully replaced and again filled with water.

It was but a short time until the tracks in the dust indicated that the squirrels of half the countryside were coming to the Davidson nursery to get their "mawnin's mawning." Mr. Davidson procured from the drug store a strong solution of strychnine, acetic acid being used in the proper amount to hold the poison in solution.

Then the cans were emptied of the water and one evening were filled with the solution. The next morning, near the row of cans on the side of the nursery there were seventy-five dead squirrels. The men employed by Mr. Davidson were working in a hay field alongside the nursery on the day following the use of the poison and it is stated that no less than three hundred dead squirrels were found as a result of the one day treatment. Since that time the scheme has been kept in use constantly and has been an ample protection to the young trees of the nursery.

We have copy of a book entitled "Where Our Wealth Lies," made up largely of statistics showing imports and exports of Mexico. Especially does it call attention to the fact that the "United States ought to be our tributary in the importation of tropical fruits." The book states that it is a matter of surprise that Mexico, although in such immediate proximity to the United States, has not yet apprehended the immense riches and possibilities of development along semi-tropical and tropical lines of production. The author of the book is Bernardo Mallen, 3 Gabino Barreda No. 47, City of Mexico.

WORK.

Boggs—I was surprised to hear that Smith had failed. He always seemed to be very busy in his office?

Woggs—Yes; he spent more time tacking up those inspiring wall-mottoes than any other man I ever saw.

Der man mit plenty of money has friends to burn, und ven he goes proke he is sorry he burned dem.

"According to this paper," observed Mr. Goodwin, "an Ohio man has lived a year on beer alone."

"Well, that's as it should be," rejoined Mrs. Goodwin. "Any man who lives on beer ought to be compelled to live alone."—Chicago "News."

"One of the best signs of a well-balanced mind is that of cheerfulness. It means a healthful outlook on life."

"Politeness is like an air cushion there may be nothing in it, but it eases the jolts wonderfully."

There are various and several kinds of undesirable trusts, but trusting to luck is the extreme limit.

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Co-Operation Succeeding.

It is gratifying to note the success that is coming to the apricot growers who formed the Dried Fruit Association. We have word from Mr. Berneike, one of the members, that Santa Ana growers shipped last week four cars of dried apricots for which 10 cents per pound was paid. Other members are now holding for 11 and even as high as 12½ cents. Affiliated with the Orange county association are a number of Ventura county producers. It is to be hoped that this organization will prove its worth to the extent that another year a much larger membership may be atracted to it. The individual grower is entirely at the mercy of the buyer unless he unites with his fellow producers.

The directors of the association are already planning for another year's work and the 100 members now selling through the association should be increased many fold before the fruit cutting season begins again.

The Universal Fruit.

It is quite safe to say that no orchard fruit is more extensively grown over the earth's surface than the apple; nor is there another fruit that so widely nourishes mankind, nor one that allows of so many uses in different forms. It is indeed a staple in domestic economy. Allowing for these facts, it is indeed surprising that it has not commanded wider attention in this state. We have had our citrus fairs, raisin and orange days, for lo, these many years; but it has been only within the present year that the California apple has come into possession of its own as a public attraction. However, it has set a rapid pace, and in the vernacular of the street is now "going some." In another portion of this week's Cultivator we give a report of the Gravenstein Apple Show held last week at Sebastopol,—really a magnificent effort, and one that is destined to call attention to that superb region as an apple-growing country.

But there are other and many sections of California calculated to produce as fine a fruit as the far famed gardens of the Hesperides. On the northern coast, along the foothill regions of the San Joaquin, in portions of the higher elevations of the Sierra Madre range, clear down into San Diego, are many sections producing apples which for eating and shipping quality are royal in a land beyond any man's measure. The mountain regions grow the red sorts in perfection; the coast valleys, like the Pajaro, are celebrated for the light colored varieties such as the Bellflower, Newton Pippin, and the Gravenstein.

It is not generally known that California is a heavy exporter of this fruit. If our statistical knowledge is not in error, the Watsonville region last year shipped something like 3500 carloads; the output from Sonoma county was not so heavy, nevertheless it was no small item. Much of this goes to Europe and the Orient at certain seasons of the year. Commercially, the apple crop is destined to rank with the orange in this state; speed the day when it shall take equal rank.

In the meantime, remember the big Watsonville Apple Show. The dates are Oct. 10-15. If you cannot be present watch the Cultivator; it will give full and detailed reports of the event.

Chul Wheat.

The University of California has been experimenting for several years with a large number of wheats on the University Farm at Davis; also at the Tulare and other stations. The idea has been to find a new variety or varieties suitable to the climate and soil conditions of different parts of the state. The one found to possess greatest merit is chul wheat, which carries No. 598. This is especially adapted to Sacramento Valley conditions. It has excellent milling qualities and has borne good crops. This last season the University distributed over 161,000 pounds of seed to different growers, and from many of these have come statements that they secured from seven to sixteen sacks per acre. Regarding this wheat Prof. Snaw of the State University says:

"Chul wheat originally came from the steppes of Russia, where it is grown without irrigation. It can be either fall or winter sown in California and still make a good crop. In its ability to withstand drouth it is a strong rival of the Durum wheats. On three of the University stations it yielded in 1908 without irrigation, at the rate of 51 bushels per acre at one, 63½ bushels at another, and at a third, with less than eight inches of rainfall, 63.3 bushels per acre. A reasonable amount of this desirable wheat is available for seed purposes this year by making application to the College of Agriculture, Berkeley."

State Fair.

Secretary Filcher of the State Agricultural Society writes of the good things which are to occur on the state fair grounds this year. He says that the applications for space for exhibits are far in excess of any preceding year up to this time. To meet this increase the accommodations at the fair grounds have been added to materially. To enhance the atractiveness of the occasion the people of Sacramento have joined in a "Fiesta of the Dawn of Gold" which will give a spectacular entertainment for the visitors. The hotels and the people generally are making every effort to care for the immense crowd expected. One estimate is that 200,000 strangers will be in the city during the fair week.

Another feature which will attract much attention on Tuesday, September 6th, will be the observance of "Exposition Day." On this day the fair grounds and the entire city of Sacramento will be thrown open to San Francisco enthusiasts who will make the most of the day in boosting for "San Francisco—1915."

There seems to be a general boosting spirit manifested, and so far as we can learn the agricultural features of the fair will not be slighted.

Capturing Thrips.

The daily press chronicles the construction by a Dinuba man of a machine which has been used by vineyardists in that section to capture thrips which are a pest in many vineyards. It is yet too early to predict the success of the machine, but the working model is described as "looking good to practical workers who have seen it in the field." The account states:

"A sack containing twenty-five pounds of the thrips was exhibited yesterday showing what the machine could do in one day's work from muscat vines and the thrips were taken from the vines without harming the crop in the least—in fact with decided benefit to the latter. A few days ago Mr. Driver applied the machine to his Thompson vineyard and since that time the vines have livened up until now it looks like a new vineyard.

"In the operation of the thrips machine the outfit mounted upon an ordinary wagon bed, is driven through the vineyard and the row of vines covered with a canvas canopy. This also extends entirely over the thrips harvester and the operation of a large blower by a ten horsepower gasoline engine gives a suction which gathers in the thrips and the insects are then blown back through a seive and grinder and into a receptable from which they are taken and burned. The machine makes a clean sweep of the thrips from the vines when going over the vineyard and has proven what it is capable of doing when in more perfect form."

The apricot outlook is exceptionally promising. A number of producers have sold at ten cents and some under that, but the larger producers of Southern California have united and agreed to sell for ten cents or better, and are now considering advancing their holdings to eleven cents. We have heard from Mr. Ong of San Jose that the crop in that valley is running nearly twenty per cent lighter than anticipated. It looks as if the wise apricot producer would secure just returns this year.

The Crop Reporting Board of the Department of Agriculture estimates that the average condition of corn on August 1st was 79.3 as compared with 85.4 last month and 82.1, average for the last ten years. The southern states show better condition of corn than the middle and western states. The average condition of winter wheat is reported by the board on August 1st at 92.6; spring wheat at 61.

Touching upon the report circulated by apricot buyers that the Crop Reporting Bureau of the Department had published that the apricot output would be immense this year, Mr. Berneike of Santa Ana writes us that he has a letter from Washington stating that no such report has been issued by the Department. In fact, the Department does not touch upon the condition or the output of apricots. Peaches it does refer to as showing the country over a condition of 87 per cent of normal. Apricot growers must keep their own counsel and not be influenced by false rumors.

Agricultural News Notes of the Pacific Coast

Northern California

A vegetable cannery is proposed for Gridley, Butte county.

One orchard at Gridley is shipping two cars of peaches daily.

Yolo county's almond crop promises exceptionally good returns.

A thousand ton lot of alfalfa hay was purchased at Gridley last week.

Thousands of acres of forest land were burned over near Sonoma, Sonoma county, last week.

A small fruit grower at Red Bluff has filed on 15,000 miner's inches of the waters of Cottonwood Creek.

An effort is being made to form a deciduous fruit growers association for Butte county.

Directors of Levee District No. 1, Sutter county, have decided to raise the levees surrounding their lands.

Beet growers near Cottonwood, Sutter county, have harvested most of their crop.

The Sutter County Almond Growers Association has voted to proceed at once in the building of an almond packing house.

Butte county's grain harvest is proving satisfactory, the crop holding out well and nearly as good as the early spring promise.

The Sebastopol Berry Growers Association had good success in shipments of blackberries to the East this year.

The fair at Ferndale, Humboldt county, is to close on Friday, September 9th with a big Admission Day celebration.

The upper Sacramento is lowering rapidly and at the end of July the river boats had difficulty in passing Butte City.

Yolo county seedless grapes are estimated to be twenty-five per cent short of the 1909 crop owing to sunburn.

The cheese and dairy industry of Vernon, Sutter county, was never in as prosperous condition as at present.

The big exhibit of Gravensteins at the Sebastopol Show was said to have been made of genuine apples, which makes Sonoma county proud.

The Native Sons' parlors of Contra Costa county are planning to scatter their line of march at the San Francisco Admission Day parade with almonds grown in that county.

Not only have the fruit shipments been heavier than last year, but returns this year are far better than for several years. The standardization movement is declared to be most beneficial.

State Commissioner Jeffrey has word from fruit importers at Amsterdam that unless higher grade of more uniform fruit is packed they cannot continue to handle California fruits.

Acting Secretary Moore of the Department of Agriculture has written that an expert of the Bureau of Entomology will investigate the pests which have proved perplexing to hop growers.

Central California

Alpaugh, Tulare county reports excellent grain crop.

Old crop Muscat raisins are selling at Fresno at 2½ cents.

San Jose Grange discussed vegetable growing at its last meeting.

Prune growers at San Jose have refused 4¼ cents.

The yield of grain in the Alpaugh section of Tulare county will be exceptionally large.

Watsonville, the apple shipping center, is being invaded by the usual corps of apple pickers and packers.

A field of cotton near Delano, Kern county, has proved that cotton will grow exceptionally well there.

It is proposed to construct a railroad from Laton into the rich country to the west.

Prices of raisins are slowly ad vancing and packers are now holding at 5⅜ to 5½.

The Armsby company is offering San Joaquin Valley peach growers from 4½ to 4¾ cents.

Wine grape growers are predicting that prices of wine grapes will range from $8 to $10.

The prune crop of Santa Clara Valley will be light, but at the same time is reported better than any since 1896.

Saratoga, Santa Clara county, reports its output of apricots 70 per cent of a full crop.

Morganhill, Santa Clara county, prunes are dropping though it is hoped a fairly good crop will be retained.

Funds have been secured for the construction of the weir of the People's Ditch Company across the Kings river above Hanford.

Orange orchards at Porterville, Tulare county, are showing a fairly heavy crop, and it will fully equal last year's output.

A grain grower near Stockton harvested 3000 bags of excellent barley from 100 acres of land, which he sold at 94 cents per cental.

Santa Clara Valley apricot growers are being freely offered ten cents, and one grower reports offer for specially fine lot as high as thirteen cents.

The Outing Farm in the hills of the Santa Clara County has proved exceptionally valuable to a large bunch of youngsters brought there largely from San Francisco.

The inspector of Tulare county held up a car of orange trees last week because of black scale. They were defoliated and fumigated before delivery.

The grain output of the Salinas, Monterey county section, is reported much lighter than last year, due largely to hot weather early in the season.

The apricot crop in the Santa Clara Valley is running from 10 to 20 per cent lighter than anticipated. Peaches are in abundance and rather hard to dispose of. There will be a fair crop of prunes in some orchards, while others are almost bare.

Southern California

Almonds are already being harvested at Elsinore, Riverside county.

A creamery is being built at Alamorio, Imperial county.

There are only about 35,000 bags of last year's holdover lima beans to dispose of.

Antelope Valley, Los Angeles county, has sunk over a hundred wells during the last year.

The dairymen of Antelope Valley are discussing the question of erecting a creamery at Lancaster.

The work of diverting the Whitewater river to the orchards of Banning is progressing rapidly.

Two orange packing houses at Fullerton, Orange county, have closed for the season on Valencias.

The Imperial Valley Oil and Cotton Company will erect a gin at Calexico.

The first cotton ginned in the Imperial Valley for 1910 was at El Centro August 4th.

Horticultural Commissioner Bishop of Orange county is urging all to join in the campaign against Johnson grass.

Many large citrus growers are emphatic in the claim that the railway figures for 50,000 cars of oranges next year are far too large.

The date groves near Coachella and Mecca, Riverside county, give promise of being a commercial success.

The directors of the orange exchange at Cucamonga have resolved to materially enlarge their packing house.

The directors of the Orange County Dried Fruit Growers Association contemplate advancing minimum price on dried apricots to 11 cents.

The percentage of sugar in the beets delivered to the Southern California Sugar Co. at Santa Ana is averaging 19.8 per cent, which is much better than last year.

A grape grower at Mecca, Riverside county, has produced a new grape which he has named the Golden Green, claimed to be superior to the Malaga which it resembles.

Orange county reports fair lima bean crop, Los Angeles county crop looks good, Ventura county, excepting in spots where wireworms have done destruction, exceptionally good.

A large citrus grower at Highland, San Bernardino county, suggests that citrus growers be careful in the planting of large numbers of grape fruit trees, as he fears there may be danger of overproduction.

The flow of water of the Colorado into the heading above Imperial Valley is increasing every day and promise is made that the normal amount will soon be supplied to irrigators.

The largest wine grape vineyard in the world is said to be that of the Italian Vineyard Company at Cucamonga, San Bernardino county. It contains 3500 acres and adjoining it are the vineyards of the Riverside Vineyard Company which has 2200 acres.

The Coast

Yakima, Washington, is shipping thirty cars of peaches daily.

Grain growers at Nez Perce, Idaho, have settled upon bluestem as the best adapted to Idaho conditions.

The Hawaiian Experiment Station has successfully budded one variety of cotton on another.

Extensive tests of Chinese and Japanese matting sedges have been made in the Hawaiian Islands.

Palouse, Washington, reports great suffering of stock on the ranges because of drouth.

The rainy season for Southern Arizona is on ,and the dry farmers are hilarious over recent copious rains.

Extensive irrigation schemes are under way for vast areas on the Island of Mindanao, Philippine Islands.

Indian lands on the Nez Perce Reservation at a recent sale commanded for a small tract at the rate of $480 per acre.

Montana sheep ranges are giving very short pasturage, but permits have been granted to turn the sheep in the national forests.

The Country Life Commission of the state of Washington will hold sessions during the National Apple Show at Spokane.

Farmers near Kendrick, Idaho, find profit in using beans as one of the crops in rotation. Bean threshers and cleaners are being installed.

The showing of live stock at the Spokane Interstate Fair which will be held October 3-9, promises to lead all former exhibits.

A large amount of grain near Pullman, Washington, was cut for hay because of drouth preventing the filling of the grain.

White Salmon Valley, Washington, will make its first shipment of apples this year, aggregating about 30, 000 boxes.

The Division of Forestry, Hawaiian Islands, made experimental plantings of eucalyptus this spring at the rate of about 2,000 trees per week.

The Division of Forestry of the Hawaiian Islands gives expert advice to owners of large tracts of land who will make practical experiments in forestation.

Farmers of Clarke county, Washington, under direction of the Pomona Grange of the county held a two days' celebration and picnic at Sara, August 10 and 11.

The Council Valley Growers Association in Idaho will make a large exhibit of apples at the National Apple Show in Spokane. There are almost a half million young apple trees in that valley.

The sweepstake event of the Third National Apple Show to be held in Spokane, November 14th to 19th will be a gold medal and one thousand dollars in gold. Prof. H. E. Van Deman will make the award.

The Farmers Educational and Cooperative Union has secured a cut on storage charges from the warehouse companies. The rate will now be forty cents a ton as against fifty cents formerly.

Coulson's
EGG FOOD

If you were going to erect a large building, you would consult an architect—if you wanted some legal papers drawn up, you would go to a lawyer—because these men have made a special study of their respective professions.

The same principle applies to the feeding of your chickens. Presumably you have not the machinery or formula for making an egg food so that it will be just what your hens need.

That's why you should buy COULSON'S EGG FOOD. It is the result of years of study—it is scientifically mixed by experts with the right proportions of the various ingredients to give a balanced ration.

COULSON'S EGG FOOD means a healthy stock, with great laying power and eggs of quality. Saves you the time of mixing—provides a better feed—makes more eggs—means more profit, as COULSON'S EGG FOOD more than pays for itself, through making hens lay to their full capacity.

It is especially advantageous to use it at the present time, when the price of eggs is beginning to increase, and when also you are anxious to have your hens in good condition for the molting season

Hens eat only what they like, but there are many foods they must have, and which must be mixed with their regular food so that they get the desired quantity. The only way the food can be mixed is by improved machinery—that's why you should feed COULSON'S EGG FOOD.

Get it at your dealer's; anyway send for our Catalog which tells about the famous Coulson products and gives valuable information about Poultry Raising.

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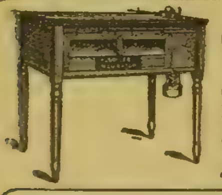

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Owens Valley Land
See Announcement on Page 163

Don't let your fowls get all run down during hot weather and molting time, but keep them in good condition.

Egg-More Booklet

tells you how. It is free. Send for it. Send us addresses of 5 persons in your vicinity who have fowls, and we will send you postpaid, an Anchor Egg Separator. For 20 addresses, we will also send The Poultry Manual, a book well worth 50 cents.

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Profit in the Poultry Yard

We solicit short articles of a practical nature from the fancier and utility breeder, giving their experience with poultry. All inquiries pertaining to feed, management, disease and its prevention will be answered through these columns.

THOSE HALF GROWN CHICKS.

By Mrs. Frank Metcalf.

WE must guard our older chicks with greater care, for often those ungainly speckled youngsters feather up beautifully, and their loss means much more than it would have when they were smaller.

The problem is, how to house them closely from midnight prowlers, and yet give them plenty of room and air. Close coops won't do these warm nights, or roup will get them, or they will run into consumption. Fresh air and clean coops they must have, and a free use of wire mesh is the cheapest method of protecting them from one enemy and guarding against the other.

An inch square of wire mesh, placed over a knot hole in a brooder would have saved a flock of 52 that were killed by a weasel a few nights ago, not many miles away, but there was thought to be no danger from this pest, so it was left unguarded.

Skunks and rats also kill many young birds, as well as old ones, so supply your premises with plenty of wire mesh to protect all coops.

Did I hear some one growl out, "It's nothing but buy and buy and buy." Well, then, save at the spigot and lose at the bunghole" as the man I mentioned above did. A penny's worth of wire mesh would have saved 52 chicks, and he would have been very willing to have given it, had he dreamed of the danger lurking near. Don't trust to luck in the chicken business, or you will invite bad luck of the worst kind. At least you will lay it to bad luck after it's over, and say the chicken business is no good anyway. It isn't for those who won't heed. A good terrier is one of the best pest exterminators we ever owned, and a cat is not to be despised if she is trained not to eat chickens, which may be done by letting her stay around the brooder while they are small and watching her until you are sure she don't molest them. A smart whipping or two usually teaches her that she is not to touch them, if she tries to play with them. But neither cat nor dog will likely get a weasel, so the safest way is to keep your coops weasel proof at night.

What a discouraging thing it is, to wait on an incubator faithfully for three weeks, then carefully fit up a brooder and go out some morning and find every chick lying with a tiny hole in its head!

How much more discouraging to 'tend them until frying size and find the same condition some unhappy morning, just when one has planned what one can buy with that broiler money. So let me add: Take all necessary care of the baby chicks, but don't let those half grown ones suffer for the least mite of care they need. Watch for mites and lice, and guard them from larger foes for just a little while longer.—Mrs. Frank Metcalf.

Don't fail to give the growing chicks plenty of fresh air at night, but,

BUFF MINORCAS.

The newest aspirants for favor in the fowl world are the Single Comb and Rose Comb Buff Minorcas originated by Mr. N. E. Luce at Binghamton, New York, in 1900. These birds have not been given place in the Standard as yet. In fact their qualifications have not been agreed upon until recently. Some months ago President Wright of the Pacific Minorca Club appointed a committee to formulate a standard for the new breed. The committee consisted of Messrs. N. E. Luce, C. C. Bonnell, H. T. Paschall of Los Angeles and Mrs. J. B. Hill of Vestal, N. Y.

The Committee reports:

"We have given no more latitude to breeders of this new breed than is allowed to the breeders of the other varieties of Minorcas and have adhered closely to all standard requirements of the Minorca family. While realizing that it is a new variety and is not so easily bred true as yet, we firmly believe that in the end the Standard as formed will be for the best interest of this new breed, and therefore we ask all judges in passing on the Buff Minorcas to use this standard and to apply it as they would were they judging any of the other varieties of Minorcas. We herewith present the following Standard:

Cock 8 lbs., Hen 6½ lbs., Cockerel 6½ lbs., Pullet 5½ lbs.

Shape.—The same shape to apply as the Standard requires for the Single Comb Black Minorca.

Disqualifications.—Red in ear-lobes covering one-third or more of the surface—yellow legs, yellow skin. All general disqualifications to apply the same as for the other varieties of Minorcas.

Color of Male.—Beak, horn color; Eyes, dark hazel; Face, bright red; Comb, bright red; Wattles, red; Ear-lobes, white; Shanks and Toes, dark or medium slate; Skin, flesh or pink white.

Plumage.—Surface color throughout a rich even shade of golden buff, free from shafting or mealy appearance, the head, neck, hackle, back, wingbow and saddle richly glossed with metallic lustre. Under color a lighter shade of buff, free from foreign color.

Black or white in wings or tail is equally objectionable and is to be considered a serious defect.

Color of Female.—Beak, horn color; Eyes, dark hazel; Face, bright red; Comb, bright red; Wattles, red; Ear-lobes, white; Shanks and Toes, dark or medium slate; Skin, flesh color or pinkish white.

Plumage.—Surface color throughout an even shade of rich golden buff, head and neck plumage showing a metallic lustre of the same shade as the rest of the plumage. Under color a lighter shade of buff free from foreign color. Black or white in wings or tail equally objectionable and is to be considered a serious defect.

Rose Comb Buffs.

Same as for Single Comb, except a rose comb to conform to the comb of the black variety.

Give your hens a bath.

Burn the old feathers and nesting material.

F. Baldwin's WHITE LEGHORNS

1st Ckl. A.Y.P. Ex.

Won 9 prizes from 9 entries at A. Y. P. Ex. and 4 1sts at San Jose, '09. Bred as layers first. Stock any age for sale. Eggs $6 per hundred. Settings $2 up. Send for free booklet and prices. ***46 Washington Ave., San Jose, Cal.***

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BEETS AS GREEN FOOD.

One of the best green foods for poultry is one that is seldom written about—the sugar beet—a food particularly valuable for promoting the growth of young stock, the later broods of which are undeveloped when cold weather comes on.

In 1909 I had a number of late-hatched chickens. They were small and poorly feathered when October arrived, and the weather was unusually cold. Having a quantity of beets on hand, I fed them, and the chickens ate not only readily, but almost greedily. I continued feeding the beets until my entire lot was consumed. I never had chickens thrive better. They grew and feathered rapidly. I simply cut the beets in halves and threw them into the pens, and not a scrap of them was left unconsumed.

I believe it is the sugar in the beets that helps to account for the chickens' fondness for them. I know that one of the methods employed to bring exhibition fowls quickly up to weight, is to give them for drink milk thoroughly sweetened with molasses or sugar. I have placed a pound to a pound and a half of weight on cockerels by the use of sweetened milk, with other foods of course, between two shows separated by ten days' or two weeks' time. If sugar given in the milk will thus hasten development, why will not sugar in the beets do the same?

In the summer-time fowls on free range find all the green food they require; yarded fowls are easily supplied. For summer use there are few things better than a piece of white clover, cut every week or so.—Farm Journal.

The egg is taking more extensively every year the place of meats, and in this era of high prices it is more nearly than ever the "farmer's beefsteak." And the wagonloads that we use in a year! If he should keep an account of the family egg consumption and add up the sum total at the end of the year, it is doubtful whether he would be able to believe his own astonishing figures. Almost the majority of farmers would find that they used in the farm house more eggs than were taken to market. And there are other wagon loads of eggs that are marketed on the "exchange" plan, where their value is arbitrarily determined by the country grocer and the farmers "take it out in trade." Many farms secure their entire supply of groceries in this way; yet this additional credit is not added to the poultry earnings of record, and the old hen is practically cheated of much that is her due; possibly one-half would not be a greatly exaggerated estimate. However, to be well within a conservative figure, a sum equal to one-sixth of the amount as credited by the government statistics may easily be added to the "value of poultry and eggs produced on the farms" last year. As Secretary Wilson says that this industry has advanced at such a rapid rate, that no arithmetic can keep up with it, we may expect that this year will be millions ahead of last. It is quite to the point in this connection to say that farm poultry products have increased nearly three times in value since that last census year.—Coleman's Rural.

FEATHERS.

The man who keeps hens is not so much of a philosopher as the man who has the hens keep him.

Poultry culture has been reduced to a science. Science is just another word for good business attention.

One reason why the women folks are more successful with poultry than men are, is that they more carefully attend to the details.

There are many breeds, and all have their merits. He has the best breed who gives it the best care and aims to secure the most good out of it. Feed, in this particular, has a great deal to do with success.

When a hen lays now and then, and not soon again, and you can't decide whether she hadn't better quit altogether, I'll tell you what to do: Why, just ax her to, and neither in box nor in keg will she ever lay another egg.—Farm Journal.

FARMER VINCENT'S WISE SAYINGS.

A little more clean litter on the floors. Keep the fowls hard at work. It is the price of health.

A shelf, a couple of feet below the roosts, is handy to catch the droppings, and handy to clean. And don't forget to clean it.

Every week there should be a fresh supply of clean, fine earth in the dust box.

Is there a place under some old building where you can spade up the earth and give it to the hens to work at? They will dig away hard to find the worms that may be in it. Nothing will do them more good.

Sell off your old rooster and get a better one than you ever had of some neighbor. If your neighbor hasn't one, go to somebody else's neighbor. Find one somewhere, for it will pay.

For hatching purposes take the eggs from the hens that lay best. Build up; never let the standard down.

Watch the hens. Find out which are doing the best work and let the rest go as soon as you can.—Farm Journal.

QUICKLY GROWN BROILERS.

The following is said to have been thoroughly tested for results, and not only tested but actually practiced by a firm of extensive poultry breeders that sell their cockerels as three pound broilers at six weeks old:

Feed the young chicks a mixture of cracked corn and cracked wheat for three days. Then give them a good dry mash, and also feed cracked corn, cracked wheat and hulled oats in a deep litter. When about four weeks old add to feed already mentioned a wet mash once a day, the mash being made of a well balanced dry mash, about half corn meal mixed with molasses. Keep grit, oyster shell, and clean fresh water constantly before them. It is claimed this system of feeding will produce plump, marketable broilers at six to eight weeks old.—Review.

The word "mash" is often used in connection with poultry feeding and nearly every week some one asks what it means. It is understood that a "mash" is a mixture of ground grain, meat or other materials. A wet mash means that this mixture has been wet with water or milk and fed in a crumbly or a soppy condition. The dry mash may be the same mixture without moisture.

GERMOZONE

Is the Best Roup Cure I Have Ever Tried

Among the many who say that are a lot who never thought Germozone would do it. Geo. H. Lee knew what Germozone would do before he placed it on the market. It is *so good* that users are not tempted to accept a substitute. No one ever found anything so good. The reason is plain—Germozone has no equal.

500 HENS SAVED

A Missouri poultryman writes that 8 bottles of Germozone saved his *entire* flock of 500 hens from Roup. Less than *one* cent per hen. A Pennsylvanian writes that Germozone would be cheap at $5.00 a box —and it will do for *you* what it has done for others. This advertisement is addressed to *you*. We want your poultry to make more money for you. We want you to recognize the importance of healthy poultry. The health of the chick or the hen is as important to it as your own health is to you. Ever stop to think about it? Perfect health is necessary for positive profit. Try Germozone and test every statement made here. No need to buy a substitute. If your dealer cannot supply you we will mail it to you, postpaid, on receipt of price—50 cts.—and will include *free* a copy of "Chicken Talk," written by Mr. Lee himself.

Come in and see our new 1911 line of Mandy Lee Incubators and Brooders at our newly opened Los Angeles branch, 225 West 2d St.

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OMAHA, NEB. LOS ANGELES, CALIF.

A Healthy Chicken is an asset: a sick Chicken is a liability: because it is apt to give disease to others. it's therefore a loss, not a gain

To keep your poultry healthy—to make every hen an asset, regularly use in the feed twice a week,

Coulson's

No. 3 Condition Powders

Give it to well chickens to KEEP them well, give it to sick chickens to MAKE them well.

Helps chickens to digest and assimilate all their food, makes hens lay right up to molting and starts them laying quick after the molting season.

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Will cut tall grass and weeds and do all the trimming along the walks and drives.
Your dealer should have them—if he has not drop us a line and we will send circulars and prices.
Clipper Lawn Mower Co.
Dixon, Illinois.

Owens Valley Land
See Announcement on Page 163

Irrigation and Forestry

"HOW FIRE HELPS FORESTRY."

THE August Sunset has an article with the above title. It treats of "The Practical vs. the Federal Government's Theoretical Ideas." It starts off with the statement that "Practical foresters contend and can demonstrate that from time immemorial fire has been the salvation and preservation of our California sugar and white pine forests."

"The practical invites the aid of fire as a servant, not as a master. It will surely be master in a very short time unless the Federal Government changes its ways by eliminating the theoretical and grasping the practical."

"The practical says, 'Let the fire at the proper time of the year run at will,' in the forest described, rather than not at all, as it can be clearly demonstrated that the class of forests named is greatly benefited rather than injured by this manner of treatment. The proof is abundant; magnificent virgin forests of the class described that have been subjected to fire at will, and not at selected favorable periods of the year, for the past five hundred to perhaps two thousand or more years."

"The practical would have removed the cause a safe distance from the tree in advance of the servant fire."

These and similar statements, cover six pages of the magazine. Replying to this article Mr. G. M. Homans, State Forester, writes the Cultivator:

In the August number of "Sunset" Mr. Geo. L. Hoxie attempts to show that practical men consider the government policy with regard to the preservation of the forests of the state from fire to be fundamentally wrong. This is very far from being the case. The most important lumbermen of the state are in complete accord with the government policy (which is also the policy of this office) and some of them whose holdings are intermingled with those of the government turn over the matter of fire protection to the government, simply paying the cost of patrol and fire fighting according to their acreage. Practically all of the big lumbermen have some of their employees appointed state firewardens. These men have power to arrest for violations of the state fire laws, to summon assistance in fire fighting and to issue permits to burn dangerous areas under such restrictions as will prevent the escape of the fire.

Mr. Hoxie's misunderstanding of the government's timber sale policy is almost perfect: He says: "The practical invites the aid of fire as a servant, not as a master." So, Mr. Hoxie, does the "theoretical." One of the conditions inserted in every government timber sale contract is to the effect that the brush, limbs and other debris caused by lumbering operations shall be piled in such a way that it can be burned when the logs have been removed from the area. Mr. Hoxie further says: "Milling operations in practical forestry would consist of simply a harvest of the ripe and mature timber and cleaning thereafter by the use of the servant fire." It would be difficult to summarize the government policy more accurately.

In fact the only real point of disagreement between the government's policy and that of Mr. Hoxie is this: He says "Let the fire at the proper time of the year run at will rather than not at all." although he acknowledges that "fire running at will is master." This point of view is absolutely selfish. There is no necessity for fire "running at will." A fire started at the proper time of the year can always be confined to the area that really needs clearing though it may cost something to so confine it. During the last year the state firewardens and government rangers granted over 3000 permits to burn dangerous areas and only three of these fires got away to run, for a time, at will. No doubt there are still large areas that need cleaning up. No doubt also the worst of these are the ones logged by "practical" lumbermen, but the most practical of these, instead of following Mr. Hoxie, take advantage of the state fire laws to burn such areas with care.

Mr. Hoxie's plan appears to be to wirte an article for a popular magazine suggesting strongly that the fire laws were made to be broken, in the hope that some careless camper will be convinced and will start a fire that will "clean up" the forests of the state. At any rate that seems to be the most important result likely to be produced by the article in question.

THE EAST AND IRRIGATION.

A recent letter referring to the hostility of the East to irrigation projects and to the arm-chair critics of the eastern section of the country who fear that the reclaiming of the western lands will introduce dangerous competition with eastern farming communities, calls for a suggestion that it is a mistake to suppose that there is any general hostility in the East to the reclamation of the arid lands of the West. Such opposition as there is has been largely stimulated by the western enemies of national irrigation, who, though few in number, have sometimes been abnormally active. It may be remembered by those who participated in the movement to secure irrigation legislation, that the support of the East through its newspapers, through the good will of its people, and finally through the very necessary votes of its representatives, was freely accorded, and the East as a whole has always supported the reclamation work, believing that the development of the West was a development of the United States. We have frequently had occasion to note a lack of reciprocity of this sentiment on the part of the West. Looking at the subject from a national point of view, we can only suggest that the very best thing for the people of both sections is to become acquainted with each other and with the different parts of our great country, to know their mutual needs, and to drop sectional jealousy and rivalry and consider national development from a national standpoint. The only competition should be a competition to see which section will do most by its own energy and ability for the common advancement. There is need enough for all the land in the United States to support the people who will be living here within the coming century. Widespread intensive cultivation of all lands that can be made available for that purpose, and the growing of forests, for wood supply and protection of springs and streams, on all non-agricultural lands are the means by which alone the future welfare of the country can be maintained.—American Forestry.

AGES OF DIFFERENT TREES.

The pine reaches a maximum age of 700 years; the silver fir, 425; the larch, 275; the red beech, 245; the aspen, 210; the birch, 200; the ash, 170; the elder 145, and the elm, 130.

Boston Ivy, with its glorious autumn coloring, cannot be excelled for brick or stone walls and attaches itself and will thrive in any soil. English Ivy, Virginia Creeper, Myrtle, Honeysuckle, all are good.

The Rural Californian

Established 1877

Leading Horticultural Journal
of the Pacific Coast

Edited by
Henry W. Kruckeberg

An exponent of Utility and Fancy Poultry, General Live Stock, Deciduous, Citrus and Sub-Tropical Fruit Culture, Economic and Ornamental Gardening, Field Crops.

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A CURE FOR ALKALI.

Almost all soil contains more or less alkali. Whenever the soil strata are such that there is no natural underdrainage, and water is applied to the surface it generally collects in the basin, the surface of the underground water gradually rises, and when it gets near the surface, excessive evaporation occurs and as the moisture passes away as pure water the salts contained in the water are left at the surface of the ground. In due time some soils take on a white appearance and vegetation suffers.

Naturally, the cure for this condition is to lower the water table, and if there is no natural drainage, this must be done by artificial drainage. Anything that will provide a channel through which the underground water may get away will answer the purpose. Brush, boulders, flag stones, tile and lumber have been successfully used.

In many cases tile have proved to be unsatisfactory. Both cement tile and some burned clay tile have shown the effect of alkali, and there are instances where each has disintegrated and gone to pieces in a few years.

The open-bottomed wooden box seems to last as well as anything, and there are instances where these have been in service for 18 years and the wood is still sound. Wood kept absolutely dry will last indefinitely, and wood kept soaked will also last indefinitely. There are instances where piles have been driven and kept continually covered with water. After centuries of time these piles have been removed and found to be as sound as they were the day they were driven.

A wooden pipe or box used for a drain is surrounded by moist earth and water continually runs through it, so it is saturated, and therefore has a long life under these conditions.

Get a good engineer to plan and lay out your drain for you and it is necessary for him to make an examination of the subsurface soil as well as of the surface soil in order to intelligently place the drain.

This is a common statement: "My ground will not drain, for I have tried it." If an investigation is made, however, nine times out of ten it will be found that the drain is an open drain, the banks have caved and choked the channel, and weeds have been allowed to grow in it. Of course, it won't work under these conditions.

Wooden boxes are easier to lay and lay properly than tile, for the sections are longer and there is less danger of tilting and choking the channel. Remember, however, that in all cases careful work must be done if the drain is to be a success. It is not an exaggeration to say that all land can be drained if the system is properly planned and the work properly done, and this is the permanent cure for alkali.—E. B. House, Colorado Agricultural College.

LIFE'S GARDEN.

There are flowers in life's garden
 To make its pathway fair—
The rose in bloom with sweet perfume,
 The orchid rich and rare,
The daisy and the violet,
 The lily of charity
And the yellow and blue forget-me-not,
 The flower of memory.

RUSSIAN THISTLE SEED.

On twelve different occasions the seed of Russian Thistle has been found in samples of commercial crop seed sent to the Indiana Branch Seed Laboratory of the U. S. Department of Agriculture, for examination. It has been found in these samples in amounts ranging from 1440 seeds in 16 pounds of alfalfa, or enough ordinarily to sow an acre, up to 33,120 seeds in 16 pounds of alfalfa. Thus far in samples examined here, it has occurred in alfalfa seed only. All the crop seed in which Russian Thistle seed was found was imported from other states. Furthermore the weed itself is known to be growing and reproducing itself in several localities in Indiana.

What the Seed is Like.

Russian Thistle is slightly larger than clover or alfalfa seed. Unless it has been rubbed off, the seed proper will be found to be capped by a thin covering, which is simply the shrivelled and dried outer portion of the flower. This helps to distribute the seed. The shape of the whole body is conical, color light to dark gray, greatest diameter one-twelfth of an inch; height one-twelfth of an inch. Beneath this outer cover is the seed proper, also cone shaped and covered with a nearly transparent membrane, through which the spirally coiled young plant within shows. Moisten and rub off the membrane and see the greenish embryo inside. The broad end of the seed proper is hollowed out more or less. Color of the seed light to dark gray, diameter and height one-sixteenth of an inch.

What the Plant is Like.

It is not really a thistle. It is a tumbleweed, a close relation of the Lamb's Quarters and Pigweed, and like them an annual and a prolific producer of seed, 10,000 to 300,000 per plant. The leaves on young plants are about two inches long, slender, and green. As the plant approaches maturity, the leaves fall off and are replaced on the flowering branches by numerous half inch spines; the plant branches, becomes bushy, two feet high and two to six feet in diameter; the outer branches are usually red at maturity. When dry, it breaks off at the ground and is carried hither and thither, far and wide, with every shifting wind, scattering its seed as it goes.

What is to be Done.

I. Learn to know the seed and plant. 2. Examine seed carefully before buying, and buy seed free of Dodder and Russian Thistle. Plenty of such seed can be had. 3. Pull up and destroy odd plants that appear in the fields. 4. If infestation is extensive, encourage seeds to germinate, and destroy seedlings; when and how this may be done depends on character of crop on the field. 5. Short rotations, involving clover and well tended cultivated crops, annihilate millions of annual weeds of many kinds.

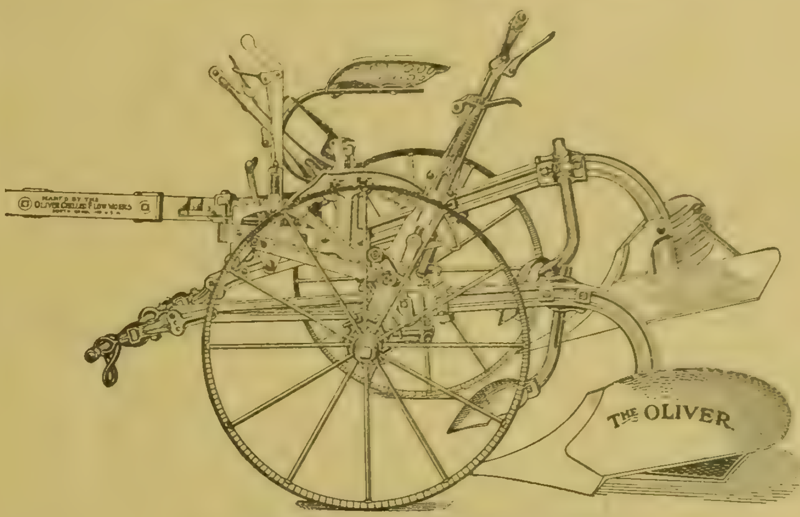
Bear in mind that to know what to look for, to be prepared to deal with it, and to "nip in the bud" this threatening pest will save Indiana farmers hundreds of thousands of dollars.—Bul. Indiana Ex. Sta.

Only the man with money can afford to be lazy, and he seldom is.

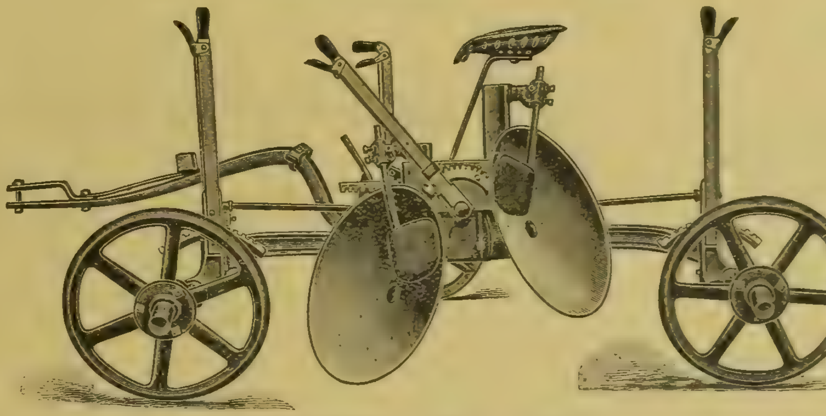
When you are down in the mouth, think of Jonah. He came out all right.

Reversible Plows
For Plowing Side Hills and Level Land

No. 508-Oliver Walking Plow



No. 23-Oliver Sulky Plow



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Our Plows are guaranteed to plow perfectly and leave the land without water furrows. Send for full description and prices.

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Queries and Replies

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

"Holding Up" Milk.

One of my heifers holds up her milk even now after her calf has been sold to the butcher. Do you know of any remedy? Some of my heifers have the scours. My alfalfa was seeded this spring and there are some alkali weeds mixed with it. Would that have any effect on this trouble?—W. S., Kerman.

Dairymen try to keep the cows happy and have found that they mourned less for their calves when separated early. It would be much easier to let the calves nurse and then milk the rest if it did not injure the cows. When this is done the cow resists giving up the last of the milk and soon dries herself off. Now a little bran or other grain fed to the heifer will distract her mind from her troubles and often they let down all the milk readily. Take time, pet and handle the heifers very gently. Rubbing and kneeding the udder will often help to induce the milk flow. Keep patiently at it until the milk is all taken from the udder. Remember this is a case where a mother is mourning for her young and she must be soothed not forced until resignation comes for her loss.

A little dry hay would probably stop the scours. Be careful not to make the cows run when bringing them in from the field. Heifers have to be handled with great care as they are naturally panicky and running is bad for them. I would prefer the scours to bloating on alfalfa, but if it runs on too long it may cause gas and bloating. A little bran with a teaspoonful of common baking soda often corrects these troubles where there is no dry hay to give them.—M. E. S.

At Calving Time.

Can you tell me what to do for my Jersey heifer? She had her first calf two weeks ago and I fear she has not cleaned herself properly. She gives two and one-half gallons per day. Is this enough milk for a Jersey heifer to give after her first calf?—Subscriber, Terra Bella.

Use a warm douche twice a day for this heifer, adding to every quart of warm water used one teaspoonful of hyposulphite of soda. Add to her bran a teaspoonful of the hyposulphite of soda twice a day for a couple of weeks.

To Drive Away Ants.

One of the most perplexing pests around the house and outbuildings is the ant. Many remedies have been given in the Cultivator and many more are advertised—doubtless all of value. An Ontario subscriber, Mr. John Barnhard, says he has accomplished immediate and complete eradication of ants by the use of Standard sheep dip mixed in the proportion of one to five and sprayed around the buildings. Every ant disappears promptly. Mixed in the proportion of one to ten it is an excellent spray for aphis and may be used on the most tender plants.

Weeds on Roadside.

Has the county through any of its officers a right to tell me to keep weeds from the county roads?—Subscriber, West Saticoy.

The horticultural commission of your county has power in this matter, but as the road has been deeded by you or a predecessor to the county, it is possible that it is the duty of the county supervisors to keep the roads clean of weeds. It must be admitted, however, that the county and state authorities usually insist on the abutting property owners keeping street shade trees pruned up to a certain height, and we presume it may be the privilege of the same supervisors to insist on abutting property owners keeping down weed pests. There is only one law which touches upon the subject directly, and that says that it shall be the duty of the board of supervisors to subdue weeds on the roads once each year. In the case of a pest this will not suffice. This question will probably be settled within the next few months.

Pruning Apricots.

I have peach and apricot trees cut heavily last winter. This spring they put out very strong growth, no fruit. Does this new growth require cutting back?—F. D., Azusa.

Had the trees been pruned to the extent of a third or a half this season's growth immediately after the fruiting season, it is possible it might have induced setting of fruit buds which next year would have given more of a crop. Heavy winter pruning always induces heavy summer growth. While it is now a little late for this experiment, we would at least try it on a few trees.

Persimmons Dropping.

I have Japanese persimmons—trees five years old—which earlier in the season were loaded with fruit, but at size of walnut, began dropping off. Now all are off the tree. The trees make vigorous growth each year.—Old subscriber, Santa Barbara.

It is difficult to give a definite answer without knowing more particulars, especially as you refer to vigorous growth of trees, but even then it is barely possible dropping may be caused by irregularity of irrigation. An orange tree will continue to grow and show full vigor when irregularly irrigated, but if allowed to get a little dried, say in the latter part of June, when water is put on, will almost surely drop off almost all its fruit. The persimmon, as a rule, holds its fruit, even to overbearing, yet it is barely possible that this dropping is due to the variety. The matter of irregularity of irrigation or of having sufficient moisture at the roots at all times should be carefully looked into.

Variety of Peach.

I send sample of peaches from three-year old trees sold to me for Muirs. On the five acres there are only three or four trees of that variety. What is the name of this peach which we send, and is it as good as the Muir or Lovell for canning and drying? Should they be rebudded?—H. J. Wippert, Hemet.

The fruit arrived badly decayed. Two specimens, however, showed very deep blush over nearly the entire peach, more than the Muir ordinarily takes on, unless the sun of the inland valley gives a deeper color. It is also red about pit. It is impossible to definitely say from the condition of the fruit, but first choice would be Reeves' Favorite and second, Elberta. Either is a fair peach and somewhat similar to the Muir. Another guess is Globe. These peaches, however, would not be good for canning because the deep color about the pit is not considered desirable by canners, at least such was formerly the case, though one canner informs us that a redness about pit is not objectionable now owing to improved process. In that respect it is similar to the Salway. From the dry, solid flesh, we take it this peach would make an excellent dryer. It is a fruit of fair quality and we do not think we would rebud the trees.

Possibly Tomato Blight.

Tomato vines turned yellow at extreme tips of branches and this affection gradually extended, taking the whole vines. Some of the vines are coming out green again and look as if they would bear well in the fall. The trouble usually begins at time second crop tomatoes are half grown. It is nothing like tomato blight. I enclose leaves.—Subscriber, Pleyto.

To be sure that this is the summer or fusarium blight, the inquirer should have sent portion of roots as well as top. The leaves were referred to the Southern California Pathological Laboratory and Mr. S. S. Rogers, assistant plant pathologist, writes:

"Yours of August 10th enclosing diseased tomato foliage is at hand. This certainly seems to be the ordinary fusarium blight of the tomato, but it cannot be told definitely from an examination of the leaves, as the source of the trouble is below ground. It is very unusual for vines once affected to recover and bear good fruit, as your correspondent states was the case. There is no advantage in spraying for this trouble, for, as stated above, the fungus is upon the roots. The best that can be done is to plant clean, healthy plants on clean soil which has grown no diseased tomatoes previously."

Egyptian Corn Fodder.

Is kaffir or Egyptian corn fodder good to feed to stock, and how does it compare with other green fodder? Some say that it is of little value.—A. C. B., San Jacinto.

Mrs. Sherman has written several articles touching upon the value of these fodder plants. They are of value, but as noted in the article in last week's Cultivator, they have been the cause of poisoning when fed at certain stages, but as the same is true regarding corn fodder, and as the danger is so limited, culture of this excellent drouth resistant plant should be encouraged.

Liquid Fertilizer.

How can I make a liquid fertilizer to use on chrysanthemums or potted plants?—K. C. M., Los Angeles.

The best way will be to thoroughly rot stable manure. Fill an old barrel that does not leak with manure. If thrown in loosely there will still be sufficient room for the water. Fill with water, mix and after standing over night it may be drawn off, even dipped off at the top. The barrel may be filled more than once. In fact, as long as the liquid shows good color after standing 24 hours, it will have strength for your plants. In case rotted stable manure is not at hand and immediate results are desired, complete commercial fertilizer may be used instead, but of course the same quantity will not be required to give equal strength of liquid.

Prune Curing.

Please tell me about curing of prunes, especially after drying. How much glycerine should be used in the process?—M. E. H., Del Rey.

The less processing in curing of prunes the better. There is a fair possibility that the use of glycerine might bring one in embarrassing relation to the pure food law. We would advise thorough investigation before dipping in glycerine. There could be no exception taken, however, to dipping in "syrup" made from the cull prunes boiled in water. In fact, more recently, that has been preferred to the glycerine dip. The prunes are simply mashed and boiled in the water until the proper consistency is secured. The liquid is racked off and used for the dip.

The drying, or more properly curing, consists of allowing the prunes to thoroughly ripen on trees. They are then shaken from the trees, preferably onto sheets, and dipped into lye solution, of a strength of one pound lye to 20 gallons of water, while boiling hot. Wire baskets are used for this process. They are then plunged into cold clear water to remove the surplus lye. When cured, not dried hard, the trays may be stacked or fruit may be put in shallow sweat boxes. Care must be taken not to overdry as it lowers the quality of the fruit. After passing through the sweat, they may be sacked and marketed, or, if packed in boxes, passed through boiling water or syrup first referred to. This removes possibility of insect infestation.

Fertilizing Citrus Trees.

Have citrus trees ten years old. They have been bearing several years and are now well fruited. They have been fertilized several times with commercial fertilizer, also with scrapings from cow corral and chicken yard. I am told they should be given another dressing the coming month and again later. Can get plenty of good cow manure. Should commercial fertilizer be used? If so, what?—G. W. G., Hollywood.

We think we would depend entirely upon the natural manure if it can be had in sufficient quantity. Of course with it a little potash or bone meal may be used. We have heard it said that the time to apply stable manure is when it can be had. If it is put on as a mulch after every irrigation, we think there will be no harm done, although if used in excess, it might result in oversize and coarseness of fruit. This can be determined as the fruit ripens, however. If commercial fertilizers are used, we would not apply at this time of year, excepting possibly the potash which is said to be good for hardening wood growth and sweetening fruit. Quick acting nitrogenous fertilizers should be used in the spring time when the greater growth of the trees calls for such fertilizers.

Fowl Ticks.

Since reading the article relative to the fowl tick in the issue of Aug. 11th I believe readers of the Cultivator will be interested in the methods used by Mr. and Mrs. H. C. Horsman, Dinuba. Their chicken houses became infested with the fowl tick and they tried numerous agents and lost a lot of chickens before learning that boiling hot water applied thoroughly to all cracks and crevices was the most effectual method of killing off the pests. Later it became their practice to use the hot soap suds left over from wash-day each week and by dipping the roosts in the hot soap suds and using the suds freely on the inside of the chicken houses they finally eradicated the ticks. Such a remedy is a cheap, effectual one and every ranch home has a plentiful supply of good soapsuds every week so that one soon forms the habit of cleaning up the hen houses regularly. Another agent used by Mr. and Mrs. Horsman is sulphur. They pick up a chicken by its legs and roll it in sulphur, dusting the sulphur thoroughly into the feathers with one hand.—H. H., Dinuba.

INCREASING CROPS BY LIVE STOCK.

Large crops and live stock go together. All hoofs are golden in their effect upon yields of grain and upon the lining of a farmer's purse. The by-products of the farm—the straw and the volunteer growth incidental to the raising of cash crops—may be combined with the yield of a fraction of the land to produce meat and at the same time sustain and increase the grain yields of the entire farm.

Four years' work just completed on twenty-one demonstration farms in various sections of North Dakota has resulted in an increase of 50 to 100 per cent in the yield of wheat per acre following the withdrawal of part of the land for sustaining stock. The yields of wheat in that state have been around twelve bushels per acre under continuous cropping. The crops on the farms managed by the experiment station to demonstrate a balanced agriculture indicate that anyone can as easily grow an average yield exceeding twenty bushels if he keeps enough stock to eat the corn produced on one-fifth of his land and the hay and oats produced on another one-fifth. This stock produces enough manure to cover one-fifth of his land each year in a moderate dressing. The three-fifths of the farm left in cash grain crops will yield a larger return than the whole farm did when only grain was grown.

The immediate and marked increase in crops from the introduction of stock has been convincing evidence of its wisdom. Last season the yields of wheat on the six original farms started on the test in 1906 averaged 26.5 bushels per acre; on the six farms started in 1907 the yield was 22.25 bushels, and on the eight started last year the yield was 14.5 bushels per acre. It costs practically as much to raise and harvest a small crop as a large one. The added bushels represent practically clear profit and measure a farmer's strides toward prosperity.—Breeders Gazette.

University Farm at Davis will make extensive exhibits at the coming state fair.

Money Making Little Liners

In this department we will insert your advertisement under a classified head for 1½ cents per word per issue. No ad accepted for less than 25 cents. Our classified columns are the clearing house for our many thousand readers.

WANTED.

WANTED—YOUR WORK PAYS THE expense to learn a trade that pays $5 a day, in a few months' time; electricity, automobiles, plumbing, bricklaying; actual contract jobs; 200 students last year. UNITED TRADE SCHOOL CONTRACTING COMPANY, 647 Pacific Electric Bldg., Los Angeles, Cal.

WANTED—TO RENT LAND FROM 30 to 100 acres, good alfalfa land with water for irrigation; or what have you to offer to an experienced farmer who can give first-class references? Address A. C. WEBSTER, Chatsworth, Cal.

FARMS WANTED—WE CAN TURN A quick sale for you, as we are in close touch with buyers everywhere. Let us show you how to save agents' commissions. Or if you want to buy property of any kind, anywhere, write us. AMERICAN INVESTMENT ASSOCIATION, Minneapolis, Minn.

WANTED—ATTRACTIVE FARMS FOR sale. Describe accurately location, water supply, surface, soil, productive area, improvements, condition, accessories, stock, etc., price and terms. Write me about money-making little farms. PARRISH BARKER, 207 Union Trust Bldg., Los Angeles, Cal.

WANTED—TO LEASE ON SHARES from 30 to 100 acres good alfalfa ranch with plenty water and good buildings. Address A. BADER, General Delivery, Pasadena, Cal.

WANTED—CAPABLE MEN TO LEARN real estate, advertising and insurance business in home locality, and represent us; no canvassing; good prospects for good men; all kinds of property listed free; send yours. MUTUAL REALTY CO., 1829 "F," 150 Nassau Street, New York.

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FOR SALE—SECOND-HAND
WINDMILLS, TANKS,
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FARM MACHINERY,
that will do the same work as new at half the price. Domestic and irrigating windmills and tanks. Twenty 2000-gal. tanks at $18.50 or $20 f. o. b.
ENGINES.
Fine 2 H. P. Fairbanks, all accessories, $65; 3 H. P. Dempster, like new, $65; 4 H. P., complete with pump, $100; 6 H. P. Fairbanks, $195; 6 H. P. White & Middleton; 9 H. P. Moore, $210; 10 H. P. Lambert, $250; 25 H. P. engine and mining hoist, 2 H. P. steam boiler and engine. Farm and light express wagons, surrey $35, baler, header; gang, disc, road, riding and walking plows; sacker, weeder, cultivator, feed rack, wagon, tanks, mounted sawing outfit, fruit crusher, bone grinder, wheelbarrows, pipe, Fresno and Slip scrapers. Most anything a rancher wants second hand. DEMMITT CO., upstairs 120 N. Main St., Los Angeles.

FOR SALE—A BYRON-JACKSON centrifugal pump, No. 6, with a 22-foot frame. All complete and in good working order. AUGUST PEUKERT, R.F.D. No. 12, Box 436, Los Angeles, Cal. Or call at the corner of South Park and Florence Ave.

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FOR SALE—OWENS RIVER VALLEY. We are preparing to place upon the market 4000 acres of the choicest apple land in the Owens River Valley, which will include one of the most remarkable gravity water systems in the State. This land is wonderful in its productiveness beyond all belief; potatoes that run 500 bushels to the acre, alfalfa three tons to the cutting, timothy with 12-inch heads, the world's fair prize for honey, and last but not least, the finest apples grown on the Pacific Coast. Red winter apples that look like wax. No other land in California to compare with it. Not flat valley land, but foothill land with gentle slope, giving perfect drainage. The choicest apple land will be subdivided into tens, twenties and forties. The most wonderful scenery in America. Fishing and hunting in the high Sierras right at your door. Trout streams within walking distance. Southern Pacific's new main line east now building through valley, but will not be finished until spring, when this land will be formally open for inspection. In the meantime send in your name and address for booklet, plats and price list, which will be mailed to you as soon as they come from the press. This land is not for speculators but for real serious farmers who know the virtues of choice land, water and climatic conditions when they see them. Will make a special and attractive proposition to buyers who will go in this summer and start their improvements before the formal opening in the spring. Will be glad to take a few serious people with me on my next trip into the valley. JAMES R. H. WAGNER & H. S. COOK, 825 Wright & Callender Bldg., 4th and Hill Sts., Los Angeles, Cal.

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SINGLE COMB BROWN LEGHORN eggs, $5.00 per hundred, $1.50 single setting. MRS. E. FORAN, Box 445, Visalia, Cal.

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TREES.

FINE LARGE EUREKA LEMON AND Valencia Orange trees, fine for replanting. Choice lot of fine Wash. Navels. Order quickly. They are going. Home 'phone 1731. JOHN R. KING, Whittier, Cal.

SURPLUS STOCK. MONTEREY PINES, 10 feet, 85c. Camphor trees, 3 feet, 25c. Black Acacias, 8 feet, 35c. Arbor Vitae, for boundary line planting, 15c. Canary Pines, 2½-3 feet, 45c; 8 feet, $1.50. BALLOU'S NURSERY, Pasadena, Cal.

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LATE VALENCIA ORANGE TREES for sale for May and June delivery. ADOLPH RIMPAU, Anaheim, Cal.

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Send orders with remittance to

CULTIVATOR PUBLISHING CO.,
115 No. Broadway,
Los Angeles, Cal.

Household Department

HOW DOES IT SEEM TO YOU?

It seems to me I'd like to go
Where bells don't ring, nor whistles blow,
Nor clocks don't strike nor gongs don't sound,
And I'd have stillness all around—
Not real still stillness, but just the trees'
Low whisperings, or the hum of bees,
Or brooks' faint babbling over stones
In strangely, softly tangled tones.
Or maybe a cricket or katydid,
Or the songs of birds in the hedges hid,
Or just some sweet sounds as these
To fill a tired heart with ease.
If tweren't for sight and sound and smell
I'd like a city pretty well;
But when it comes to getting rest,
I like the country lots the best.
Sometimes it seems to me I must
Just quit the city's din and dust,
And get out where the sky is blue—
And, say—how does it seems to you?
—Eugene Field.

THE GIRL ACROSS THE WAY.

THE young man who figures in this is employed in an office in a downtown skyscraper. His desk is by a window that overlooks a court. Directly across the court from him another person works at a window. Yes, this person is a girl, of course. There wouldn't be any sense in taking off one's coat and recording a lot of facts about two men working at two windows at opposite sides of a court, would there?

Now a young woman, if she be of face and form and garb that constitute a balm to the optics may be a source of much inspiration—if one may believe all that gets into print. Still, if the truth be known in the case of this young man, he might have accomplished more for his employer if there had been no haired, ratted young creature across the way. For the sight of the girl across the way and concentration were things apart. The young man would look at the figure across the court when there were figures on paper right in front of him that he might have looked at. Once he was offered a better job with another firm, but he staid where he was for the sake of the view.

Don't get a wrong impression. It was not in a flirtatious spirit that the young man gazed absently across the court. The creature at the window opposite was not the kind that couldn't make her eyes behave. She had her lamps under perfect control. There was something about her that dispelled any notion one might have to get familiar without a formal introduction.

She had a sweetly serious countenance that made one think she must be a great help to her mother. There was something unusual about her. She had her soft lustrous hair propped up some with rats, it is true, but not to extremes. Her eyes were full of gentleness and she smiled often. Not at anybody, though—just smiled good humoredly as she took dictation or went ahead with her work.

The young man across the court dividing his attention between the two kinds of figures had never heard her voice, but he knew that it was soft and low and resonant. She didn't come to work with a different oufit on every day, either. But she always wore color combinations that seemed to have grown up together and her shirtwaists were wonderfully fresh and neat. That was one thing that appealed to the young man opposite. She looked like a girl who could make herself presentable without spending so much money that whoever started in to make out the checks would be obliged to quit going to a good tailor for his own clothes.

In the six months or more that the young man had been looking across the court at the features of his ideal, their eyes had never met squarely—not once. She would look over occasionally in a dreamy way, but when the two lines of vision were about to become coincident she would glance leisurely away. It was impossible for one to send any wireless, "Honest, I know you'd like me" message to her. "Pretty refreshing, too," the young man opposite told the boys in the office.

She wasn't going around making any chance acquaintances, but he was willing to bet that once a fellow got to know her real well she was the sort of a girl who would take a keen interest in him, would chide him for not wearing a vest on a cool evening when he might catch cold, and would notice every time he wore a new necktie. He went around thinking such thoughts as that all day long. It was a shame, he kept remarking, that a girl like that had to earn her own living and brush elbows with a sordid business world.

At last—and this was only ten days or so ago—he found himself in the realization of one of his fondest hopes. He met her! It happened out at the beach. She had gone out with her sister, and her sister's gentleman friend and this friend was acquainted with an old friend of our hero who was out there, and things worked out so that everybody was introduced all hands around. The young man of the window on the court and the creature of the window opposite strolled away to talk things over until the next dance should start up.

"I've saw you at the window a thousand times," she began. "Of course I never liked to rubber or nothin'. Maw always brought we girls up not to stare at no one, and the boss jest about throws a fit if he sees anybody in the office lookin' as if they wasn't 'tending strictly to bizz. I never have knew such a place to work. I'd have went to some other office long ago only the pay's pretty good and I need the cush."

Thus did she talk on, spreading bad grammer and bromides at every breath.

The young man danced with her silently and then excused himself. His illusion was so rudely shattered that he felt like a man who had been struck over the ear with a paving brick. Next week he is going to have his desk moved away from the window.

A GOOD LANDING.

"He always was a lucky fellow."

"What do you mean?"

"When he fell out of his airship, he plumped straight through the skylight of a hospital."—Woman's Home Companion.

KITCHEN HINTS.

To scald tomatoes easily, place them in a thin bag and dip in boiling water.

Chopped preserved ginger added to the sauce served with cottage pudding is a delicious accompaniment.

To give a very delicate scent, place a large piece of orris root in the water in which lingerie is washed.

To keep salt meat from molding, rub every fortnight with white of egg in which has been mixed a little salt.

A pallette knife is a great help in the kitchen ıor cleaning cake dough from the mixing bowl and for many other uses.

To get the best results from dried fruits, put to soak in warm water to which a generous pinch of salt has been added.

To clean and tighten cane seats soak them well in hot water and use soap if it is needed. Then dry in the open air.

A tasty dessert is made of squash or pumpkin prepared as for a pie. It is baked in a pudding dish like a baked custard.

If the cellar is dark, it is a good plan to have the bottom step painted white so that it can be seen in the dim light.

A little molasses put on the roosting place of the sparrows when they become a nuisance over the windows will drive them to other quarters.

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SMILE A FEW AND BOOST A BIT.

Here! you discontented knocker
  Growlin' 'bout the country's ills,
Chloroform your dismal talker;
  Take a course of liver pills.
Stop yer durn ki-o-tee howlin',
  Chaw some sand an' git some grit;
Don't sit in the dumps a growlin',
  Smile a few,
    An' boost a bit.

Fall in while the band's a-playin',
  Ketch the step an' march along;
'Stead o' pessimistic brayin',
  Jine the hallelujah song;
Drop yer hammer—do some rootin',
  Grab a horn, you cuss, an' split
Every echo with yer tootin',
  Smile a few,
    An' boost a bit.

—Exchange.

A WIDOW'S BOY.

Nature made it very hard for us to keep from babying my son. All his early years he was a high-strung little semi-invalid. During that time I tried not to let the boy feel himself too important. I tried never to let him know that all my life was centred in his, or that I worried over him. I always assumed that his indisposition was slight and such as any other child might have. On no condition did any of us mention nerves. If anything annoyed him when he was in no condition to bear the excitement, the cause of his irritation was unobtrusively removed. We never discussed in his hearing his lack of appetite.

As he gradually grew into more normal boyhood, there was some change in our relationship. The child was ever shy and retiring, and wanted to stay always near me. Now, I fa pushed him into the arms of "the fellers." Many mothers make ar fuss over deciding with whom their boys shall associate. I let my soı for the most part, make his own choice. I made him understand th I trusted he would not become intimate with any boy who did not live up to our code of honor.

After paying two-thirds of his college expenses, my boy is now takin care of me. And is it necessary to say that I am a proud and happy mother?—Harper's Bazar.

CO-OPERATIVE LAUNDRY.

Another feature along the co-operative line which we cannot refrain from mentioning is the possibility of simplifying the work of the farm home by the establishment of co-operative laundries in connection with the co-operative creameries, where the hot water and the engine used in the forenoon in the creamery may be utilized one or two afternoons in the week, washing at least the heaviest and dirtiest clothes from the surrounding farms. Such a plant can be equipped at a much smaller cost than can a hay fork be placed in each of the barns in a community, and such a plant would be in use every week in the year.—Minnesota "Farm Library."

CLEANING WHITE CANVAS SHOES

With a clean cloth dipped in alcohol, remove the grass stains. Then, after the shoes are dry, rub magnesia thoroughly into the muddy spots and soiled places, leaving it on for an hour or so; then brush it all out and all of the dirt will come with it. Magnesia can be also used very effectively to clean the hem of white skirts that do not show any signs of dirt except soiled edge.

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Compare this machine with any you see offered for sale for even double our price. If you are not perfectly satisfied that this is the greatest talking machine value ever offered and just as we represent it to be, you may ship it back at our expense and we will refund full amount paid, together with transportation charges.
Specifications: Cabinet—Genuine oak, 12½ inches long, 12½ inches wide, 7 inches high, with fine hand rubbed finish. Horn—Ornamental Morning Glory shape, scientifically designed to secure the best acoustic properties; diameter of bell 14 inches, length 24 inches. Turntable—9 inches; takes any size record. Motor—One of the latest and has more improvements than motors found on the higher priced machines. Plays 5 minutes with one winding and can be wound while running. Is noiseless and interchangeable.
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San Francisco and Los Angeles Produce Markets

Los Angeles Markets

LOS ANGELES, Aug. 17, 1910.

Butter.

Butter is in fair lemand among jobbers and still holds its high values of last week.

Price to trade 2½c in advance of the following Produce Exchange quotations:

Extras	34½
Firsts	31
Cooking	23½

Cheese.

Northern fresh	16½@17
Anchor, large	18
Oregon Daisy	18½@19
Imported Swiss	27@30
Domestic Swiss	22@24

Eggs and Poultry.

Eggs steady with heavy demand for case count. Receipts yesterday were 179 cases.

Paying price f. o. b. L. A. is:

Local ranch candled	37
Case count buying price	33
Eastern fresh	30
Eastern storage	27

Dealers pay for live poultry f. o. b. L. A.:

Hens, per lb.	15@17
Roosters	9
Broilers	16@17
Turkeys	22@24
Geese	12
Ducks	14¼
Squabs, per doz.	1.50

Live Stock.

The following quotations are f. o. b. Los Angeles, on all stock:

Hogs, 175 to 200 lbs.	9
Prime Steers	5
Heifers	4@4½
Calves, per lb.	5¼
Sheep ewes, per head, shorn	4.00@4.50
Lambs, per head	3.50
Wethers, shorn	4.00@4.50

Potatoes.

The demand for Highlands holds them very firm:

Wholesale prices are:

Local Burbanks, ctl.	1.50
Highlands	1.35@1.50
Sweets, Yellow, per lb.	3½

Onions.

Wholesale quotations:

Yellow Danvers	1.75
Silver Skin, per ctl.	3.00
Brown Globe	1.75
Bermudas, crate	1.50
Garlic	8

Vegetables.

Wholesale quotations:

Asparagus	15
Artichokes, northern, doz.	85@1.00
Beets, sack	90
Beans, green	4@5
Beans, Limas	5
Brussels Sprouts	10
Bell Peppers	5
Green Chilis	4
Cabbage, per sack	1.50
Cucumbers, per box	25@40
Celery, crate	3.00
Cauliflower, per doz.	1.25@1.35
Carrots, per sack	90
Egg Plant per lb.	5
Endive, doz.	40
Green Corn, box	35@50
Green Onions, per doz. bunches	20@25
Lettuce, choice, per crate	1.00
Leeks, per doz.	35
Okra, lb.	6
Peas, per lb.	6@7
Parsley, per doz. bunches	25
Parsnips, doz. bunches	15@20
Radishes, per dozen bunches	10@15
Rhubarb, strawberry, per box	1.25
Rhubarb, crimson winter	75
Spearmint, doz. bunches	30@35
Spinach, per dozen	20@25
Summer Squash	35@50
Turnips, sack	90
Water Cress, doz. bunches	25@35
Tomatoes, box	40@50

Citrus Fruits.

Valencias	3.00@4.00
Grapefruit	2.00@3.50
Lemons	3.50@5.00

Fresh Fruits.

Wholesale prices on the market are:

Alligator Pears, per	3.00@4.00
Apples, W. Astrachan	1.50@1.60
Apples, Belloflwers	1.15
Gravensteins	1.40
Alexander, lug	1.40
Crabapples, box	1.75
Casabas	1..00@1.50
Cantaloupes, crate	2.50
Figs, box	75@1.00
Grapes, lug	75@85
Pears, box	1.25
Bartletts	1.75
Strawberries	5
Raspberries	6
Blackberries	7
Pineapples	6@7
Logans	5@6
Nectarines	1.00@1.50
Peaches, box	75@1.00
Plums, box	75@1.25
Prunes, box	75@1.25
Quinces, lug	1.00
Watermelons, lb.	¾@1

Dried Fruits.

Wholesale prices are:

Apricots	12½
Evap. apples, fy, per lb.	8½
Peaches	6@7
Pears	9
Nectarines	8@10
Prunes	4@9½
Plums	7@8

Beans Dried.

Wholesale quotations:

Limas, per ctl.	5.00
Pink, No. 1	7.25
Black eyes	4.50
Lady Washington	4.50
Small white	4.75
Garvanzas	4.50
Lentils	7.00

Nuts.

Wholesale quotations are:

No. 1 soft shell walnuts	15
No. 2 soft shell	10
Walnuts, budded	16
Almonds, IXL, per lb.	17
Pecans, polished	15
Peanuts, Eastern	7½
Peanuts, Cal.	6

Honey.

Wholesale quotations:

Extracted water white	8¼
Extracted light amber	7
Comb W. W.	18
Light amber	15
Beeswax	30

Hay.

Buying prices f. o. b. cars L. A. are:

Barley hay	8.50@11.00
Alfalfa	9.00@10.00
Wheat hay	10.00@12.00
Tame oat	11.00@13.00

Grain.

Wholesale selling price f. o. b. Los Angeles:

Wheat, new, per ctl.	1.90@1.95
Corn	1.80
Popcorn, ctl.	3.00@3.45
Egyptian corn	1.85
White oats	1.90
Seed Rye	2.10
Seed Barley	1.30

Feed Stuff

Wholesale selling price f. o. b., Los Angeles:

Cracked Corn	1.85
Cracked Wheat	2.05
Shorts	1.80
Bran	1.55
Oil cake meal	2.50
Feed Meal	1.90
Rolled Barley	1.25

San Francisco Markets

SAN FRANCISCO, Aug. 16, 1910.

Butter.

Butter dropped to 31½ for extras on Friday and still remains at that figure. Supplies plentiful though general condition of market is firm:

The official quotations of the San Francisco Wholesale Dairy Produce Exchange for today are as follows:

California extras, per lb.	31½
California firsts	30½
California seconds	28

Cheese.

California flats, new	12½@15½
Cal. Young Amer. fy. new	16½@18

Eggs and Poultry.

Eggs advanced Monday and now stand one cent above last week's quotations. Market firm.

Official quotations of the S. F. Wholesale Dairy & Produce Ex. are:

Fresh ranch extras	36
Firsts	32
Seconds	23
Thirds	20
Hens, per doz.	5.00@10.00
Roosters, per doz.	5.00@9.00
Fryers, per doz.	5.00@5.50
Broilers	2.50@3.50
Geese	1.75@2.00
Ducks	4.50@7.00
Pigeons	1.50@2.25
Squabs	2.50@2.75

Live Stock.

San Francisco prices gross weight:

Steers	3½@5
Cows and heifers	2½@4
Hogs	6@9½
Calves per lb.	4½@6
Milk Lambs, unshorn	6@6¼
Wethers No. 1	4¾
Ewes No. 1	4¼

Potatoes.

Wholesale market quotations:

River White, new, box	85@1.00
Salinas Burbanks	1.15@1.25
Merced Sweets, lb.	3

Vegetables.

Wholesale quotations:

Artichokes	35@40
Asparagus ,per box	50@1.75
Beans, string, per lb.	3@5
Beans, Limas, lb.	4@6
Cucumbers, box	25@40
Celery, per crate	90@1.50
Chili Peppers, per box	40@60
Bell Peppers	6@7
Green Corn, sk.	1.00@1.75
Egg Plant, per box	40@65
Lettuce, per crate	4.50@5.00
Okra, box	40@50
Peas, per lb.	6@7
Rhubarb, box	50@75
Summer Squash, box 25 lbs.	40@50
Tomatoes	75@1.25
Garlic	3@4

Onions.

Onions, sk.	90@1.10

Citrus Fruits.

Valencias	2.50@4..00
Grapefruit	1.50@3.50
Lemons	2.50@5.50
Limes	5.50@6.00

Fresh Fruits.

Apples, box	75@90
Apples, Gravensteins	1..00@1.25
Crabapples	50@1.00
Muskmelons	2.00@2.50
Nutmegs	65@1.00
Figs, box	40@1.00
Grapes, seedless	50@65
Grapes, Muscat	60@75
Huckleberries, lb.	10@12½
Pears, large box	60@1.10
Bartletts, wrapped	1.00@1.25
Bartletts, ton	25.00@35.00
Peaches, box	40@1.00
Nectarines, red	40@90
Quinces, box	85@1.00
Plums and Prunes, crate	60@75
Blackberries, chst.	4.00@5.00
Strawberries, chst.	4..50@6.00
Logans, chest	6.00@8.00
Pineapples, doz.	2.50@3.00
Watermelons, per doz	1.25@2.50

Dried Fruits.

Santa Clara prunes	3¼@3½

1 cent premium for larger sizes.

Apricots per lb. Royal	9@12
Peaches	5@5¼
Walnuts, hard shell	13
Pears	5@7½
Figs	3¾@5
Nectarines	5@6
Plums	7@8

Futures on 1910—Apricots, 9½@10¾; Moorparks, 11@12. Peaches, 5½@6½. Prunes, Santa Claras, 3¾@4¼, ½ cent premium. Figs, 3½@5.

RAISINS—1909 crop, f. o. b.; fancy seeded, 16-oz. cartons, 5@5¼c; do, 12-oz., 4½c; do, choice, 16-oz., 4½@4¾c; choice. 12-oz., 4c; 50-lb. boxes loose Muscatels, standard, 4-crown, 4@4½c; 3-crown, 3¼@3½c; 2-crown, 2½@3c; seedless Thompson, unbleached, 3c; do, bleached, 5@6c; Sultanas, unbleached, 2¼c; do, bleached, 4@4½c; Muscatels, unbleached, 2¼c; London layers, clusters, 2-crown, 85@90c; 3-crown 90c@$1; 4-crown, $1.30@1.50; 5-crown, $1.75@2; 6-crown, $2@2.50.

Nuts.

Walnuts, S. S. No. 1	13½
Walnuts, hard shell	13
Almonds, '09, N. P. U.	13½@14
Almonds, '09 Nonp.	15@15½
Almonds, I X L.	14@14½
Pecans	15@17
Chestnuts	14@15

Beans Dried.

Limas	4.45@4.55
Pink	6.00@6.20
Black eyes	5.60@5.75
Small white	3.90@4.00
Large white	3.80@3.90
Kidneys	6.75@7.00
Garvanzas	3.25
Bayo	6.00@6.10
Horse beans	1.75
Red Mexicans	6.00@6.10
Cranberry	4.50@4.75

Hops

Hops, 1909 crop	10@14
Hops, 1908 crop	8@10

1910 contracts now being made at 12@14 cents.

Honey.

White comb	14@15
Amber	10@12
Extracted W W	7½
Extracted light amber	6½@7
Beeswax, per lb.	24@30

Hay.

Arrivals of hay during the week have been 5300 tons, being about the same as received during the last week. In the interior districts not much hay has changed hands lately. A great deal of hay that has been purchased during the last month by dealers for shipment to San Francisco has been brought into market and sold at a loss. Large quantities of hay that are in districts where storage is not available will have to come into this market.

There has not been much hay going forward for export account lately, although it is expected that this trade will be a little better shortly.

Alfalfa hay is higher, and the feeling thoroughly firm at the advance, for the reason that the Northern cities have sought our market for a large supply of this commodity for both present and future use.

Fancy wheat	12.50@13.00
No. 1 wheat or wh and o.	10.50@11.50
No. 2 wheat or wh and o.	9.00@10.00
Choice tame oat	11.00@12.00
Other tame oat	8.00@10.00
Wild oat	7.50@9.50
Stock hay	5.00@6.00
Alfalfa	8.50@11.50
Straw	40@55

Grain.

Wheat No. 1	1.62½@1.67½
Barley, good to choice	1.05@1.07½
Barley, poor to fair	1.00@1.03¾
Oats, white	1..60@1.65
Rye, new crop	1.50@1.60
Corn, large yellow	1.55@1.60
Alfalfa seed	16@18
Mustard brown	3¾@4½
Millet	2½@3
Flaxseed	4½@5
Broom corn seed, per ton	23.50

Feed Stuff.

Bran, per ton	23.50@25.00
Feed cornmeal, per ton	34.00@35.00
Cracked corn	34.00@35.00
Ground barley, per ton	23.00@24.00
Rolled oats, per ton	28.00@29.00
Middlings	32.00@34.00
Oil cake, per ton	40.00@41.50
Cocoanut cake per ton	25.00
Mixed feed, per ton	24.00@30.00
Shorts	24.00@26.00

Deciduous Market

Sacramento California, Aug. 13, 1910.

The following circular of the California Fruit Distributors gives number of cars of deciduous fruit shipped from all points in California for the week (7 days) ending Friday morning, August 12th, 1910:

Peaches.

Two hundred and fifty four and one-half cars: Shipments of this variety held up better than was expected during the past week, but there will be a heavy decline next week Salways will begin moving in a limited way in a few days but there will be no shipments of consequence until the following week. About September 1st the heavy movement of Levy's clings will begin.

Plums:

Eighty nine and one-fourth cars: Plum shipments are decreasing daily and will continue to do so during the remainder of the season. There are a few Grand Duke, Hungarian and Kelsey still available.

Pears:

Twe hundred and twenty-six and one-fourth cars: Last week's shipment shows a decline in this variety and this will be found to be greater during the next seven days. There are a very few pears now available for the f.o.b. trade.

Grapes:

Two hundred and twenty-three and one-fourth cars: The grape movement is now fairly well under way. Movement consists principally of Malagas and Thompson Seedless, but Tokays from the earlier section are becoming fairly plentiful in the auction cars. It probably will be ten days to two weeks before we will have this variety to offer in quantity. Rose of Peru are just about ready to move and will be forwarded in a limited way during the coming week.

The weather has remained fine and all conditions are favorable to the perfect development of fruit.

ALMOND PRICES.

The following is from New York, August 5th:

Spot Tarragona almonds are firmer at 15¼c. A good deal of local interest is noted in best grades in spot California almonds. Prices by the California Almond Growers Ass'n selling agents are looked for in the next few weeks. There is a firm tone in cables on 1910 crop foreign almonds. California quoted N. Y. as follows. Nonpareil 17; Ne Plus 16 and Languedocs 12¾.

After a very interesting meeting of he representatives of the various associations of this Exchange in Sacramento yesterday the management and selling agents were authorized to quote out to the trade the Exchange almonds at the following prices:

Nonpareil	16½
I X L	15½
Ne Plus Ultra	14½
Peerless	13½
Drake's Seedlings	13
Languedoc	12
Hard Shells	8½

Other varieties will be handled at relative prices, the size and shape of he kernels and the percentage of kernel to shell being considered. These prices have been arrived at after the most careful and conservative gathering of statistics on the crop of this year both at home and in Europe, and the needs of the market. We have every reason to believe that these prices are justified this year and if so we should receive them. Let us see now what will become of the almonds outside of the Exchange.

Inspectors were selected at yesterday's meeting for the various receiving warehouses and we think everything will be in readiness to begin loading out cars by the first of September. It is doubtful if it would be advisable to start sooner. Bags were shipped from San Francisco the 11th to Lodi, Lancaster and Oakley; on the 12th to Davis, Esparto, Yuba City, Live Oak, Antelope, Fair Oaks and Paso Robles.

In sulphuring almonds be sure not to over-sulphur them. You can add more if you do not get enough but if you get too much you cannot get rid of the excess.

Let everyone work to make our output this year superior to anything that has gone out from California in the almond line. If you will do this we will surely get on the map for next year.—California Almond Growers Exchange. J. P. Dargitz, Secretary and Manager, Secramento, Cal., August 13th, 1910.

Citrus Market

LOS ANGELES, Aug. 17, 1910.

A material decrease in the number of cars going forward each day has helped to strengthen the Valencia market. The same conditions as to excess of small sizes still embarrass the market somewhat, but there can be no complaint of the general situation. Dry fruit from the frostier sections is a factor which has to be handled but is not proving as embarrassing as with the navels. Approximately there are 200 cars yet to go. With the more han two months of legitimate Valencia season the market will handle this amount at strong prices.

The warm weather given for the past four or five days in many parts of the East has cleaned up nearly every box of lemons on the market, and the few foreigns, together with the limited number going from this state are commanding satisfactory prices.

Shipments.

Total shipments of citrus fruit to date since November 1st, 1909, 28,350 cars of which 24,138 were oranges and ,212 lemons. To same date last season, 35,167 cars, of which 29,591 were oranges and 5,576 lemons.

NEW YORK, Monday, Aug. 15.—The market in oranges today showed an easier tone, the sales being made at prices that were 15c to 20c lower than previous sales. There was a good demand. Fifteen cars oranges sold. Market easier with lower prices. Cloudy and muggy.

VALENCIAS—	Avge.
Titus Ranch, fy., San M. G. P. A.	$3.85
Toreador, sd., San Marion G. P. A.	2.70
Titus Ranch, fy., San M. G. P. A.	3.70
El Toreador, sd., San M. G. P. A.	2.80
Security, S. T. Exchange	2.75
Puck, fy., F. H. Spelch	1.95
Wild Flower, Randolph Frt. Co.	2.75
Geranium, xc., Randolph Frt. Co.	1.75
Flute, ch., Rondolph Frt. Co.	1.40
Golden Pheasant, xc., Ind. Frt. Co.	3.25
Stag, A. C. G. Exchange	5.20
Pointer, A. C. G. Exchange	4.05
Cupid, V. C. Exchange	5.10
Airship, V. C. Exchange	4.10
Red C. Cov. Frt. Exchange	3.45
Cougar, Cov. Frt. Exchange	2.95
Rossmoyne, fy., E. M. Ross	2.70
Standard, sd., Nat. Orange Co.	1.90
Dan Patch, A. F. Exchange	2.80
Pony, A. C. G. Exchange	2.10
Red Shield, A. C. G. Exchange	3.00
Green Crown, A. C. G. Exchange	1.15
Old Mission, fy., C. C. Chapman	6.60
Old Mission, ch., C. C. Chapman	5.30
Golden Eagle, sd., C. C. Chapman	4.35
Constitution	3.75
Stock Label	2.00
Aurora, fy. or., E. Peycke Co.	4.25
Orchard, or., National Orange Co.	3.10
Standard, sl., National Orange Co.	2.15

LEMONS—O. K., A. C. G. Ex., $4.25. GRAPEFRUIT—Stag, $2.75; Blue Seal, $1.10; Dan Patch (seedling), $2.15; Dan Patch (seedless), $1.95; Golden Eagle, $3.05; Orchard Halves, $1.70.

BOSTON, Monday, Aug. 15.—Six cars sold. Weather hot. Market firm.

VALENCIAS—	Avge.
Martha Washington, S.S. Ex., S.A.	$3.45
Carmencita, S. T. Ex., Fullerton	4.60
Camel, Q. C. Ex., Corona	3.00
Stock Label	2.10
Golden Kiss, S. S. Ex., S. Ana	2.15
Homer, Q. C. Ex., Corona	4.00
Constitution	3.55

LEMONS—Quail, O. K. Ex......$4.65 GRAPEFRUIT—Clown, fy., Sparr Frt. Co., $1.95; Crackshot, or., Sparr Frt. Co., $1.45.

PITTSBURG, Monday, Aug. 15.—Three cars sold. Market very steady on oranges and lemons. Weather cool and clear.

VALENCIAS—	Avge.
Pomona, S. A. Exchange	$3.35
Cycle, V. C. Ex., Fillmore	3.75
Airship, V. C. Ex., Fillmore	4.00
Oriole, V. C. Ex., Fillmore	3.35
LEMONS—	**Avge.**
Hillside Gem, Loveless F. Co., Escondido	$5.20
Palomar, Loveless Ft. Co.	4.85

PHILADELPHIA, Monday, Aug. 15—Four cars Valencias, 1 mixed car and 1 car lemons sold.

VALENCIAS—	Avge.
Quail, O. K. Exchange	$3.75
Pointer, A. C. G. Ex., Glendora	3.60
Aurora, fy, or., E. Peycke Co	4.40
Topaz, XC., C. C. U.	2.90
Glendora Hghts., A. C. G. Ex.	4.60
Hunter, A. C. G. Ex., Glendora	2.90
Dixie, ch., C. C. U.	3.00

LEMONS—Liberty, E. F., Escondido, $3.35 BUDDED—Heapgood, $1.80; Pyramid, $1.30. ST. MICHAEL'S HALVES—Heapgood. $1.25; Pyramid, 95c.

CLEVELAND, Monday, Aug. 15—One car Valencias, 1 lemons sold. Market lower on oranges, higher on lemons. Weather hot.

VALENCIAS—	Avge.
Pomona, S. A. Exchange	$2.90
LEMONS—	**Avge.**
Commercial, A. H. Ex., Prenda	$2.90

ST. LOUIS, Monday, Aug. 15—Two cars lemons sold. Weather hot. Market weak.

LEMONS—	Avge.
Palm Tree, A. H. Ex., Arlington	$3.00
El Toro, Sd., C. C. U.	3.90
Topaz, XC., C. C. U.	4.50
Palm Tree, halves	1.50

CHICAGO, Monday, Aug. 15.—Lemons: There is a good trade. Offerings are not large and the market rules firm. Boxes, California choice, $5.25@5.50; extra choice, $5.75@6.00; common, $4.50@5.

Oranges—Offerings are fair, and there is a light demand. Prices are ruling steady. Boxes, late Valencias, extra choice, $4.25@4.50; choice, $3.50 @3.75.

CINCINNATI, Monday, Aug. 15—Weather warm. Market steady. Three cars lemons and two cars Valencias sold.

VALENCIAS—	Avge.
Don Quixote, S. T. Ex., E. Alhambra	$3.50
Pomona, S. A. Exchange	2.30
LEMONS—	**Avge.**
Homer, Q. C. Exchange, Corona	$4.95
Family, Q. C. Ex., Corona	3.40
Bridal Veil, or., Limoriera Co.	4.75
Camel, Q. C. Ex., Corona	4.55
Old Oak, ch., Tustin P. Co.	3.25
White Cross, Limoniera Co.	4.40

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On hand every day of the year. Free 32-page catalog gives prices, descriptions, etc. We ship to every town in the West. Our prices are lower than any other dealer, as we buy more and sell on less margin of profit. We can fill orders for White and Brown Leghorn hens, 10 months old, Barred Rock, Rhode Island Red and Black Minorcas 10 months old. We have Black Minorca, Rhode Island Red and Buff Orpington pullets 2, 3 and sometimes older. Send today for catalog. State what yo wish—kind, age and quality, and we can name the price.
We can fill orders for Reds and Barred Rock chicks ever Tuesday at present.

Pioneer Hatchery Co., 112 E. 8th, Los Angeles

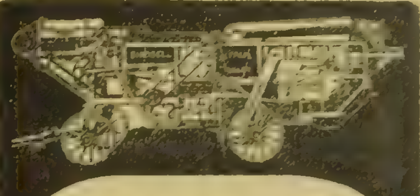
BIRDS OF CALIFORNIA.

The Department, having concluded its investigations as to the harmful or beneficial effect of California birds upon the fruit industry of that State. has issued the second and final part of its report in Bulletin No. 34 of the Biological Survey. Seventy species of the feathered denizens, among them some of the most important birds of the state from the farmers' and fruit growers' standpoint, were systematically investigated. It is true that many of them have not been charged with the destruction or injury of fruit or any other farm product, but as almost all destroy great numbers of harmful insects, or devour seeds of noxious weeds, they are important as a factor in farm economics and the aim has been to collect all data possible on the food of the several species, so that a just verdict might be rendered as to the birds' economic relations.

Few birds are always and everywhere so destructive that their extermination can be urged on sound economic principles; some, like the swallows, swifts, wrens, and chickadees are so strictly insectivorous that they are exceedingly beneficial, while others may injure crops at certain times of the year, but the loss is exceedingly small, and if by its insectivorous habits the bird prevents much greater destruction than it inflicts, the farmer should be willing to bear the lesser loss.

A reasonable way of viewing the relation of birds to the farmer is to consider them as servants, employed to destroy weeds and insects, for whom sufficient food and needed protection is generously provided. In the long run, no part of the capital invested in the farm or orchard is more certain to pay big interest than the small sum collected as toll by the birds that harbor near the premises. Deductions from the extensive investigations undertaken in response to numerous complaints concerning depredations by birds in orchards and vineyards on the Pacific Coast, show that the food habits of the seventy species, whose stomach contents were under examination, indicate that but four species common in California can be regarded as of doubtful utility. These are the linnet, California jay, stellar jay, and redbreasted sapsucker. Therefore, when all the known methods of protecting fruit have been exhausted, or can not be profitably employed, a reasonable reduction of the numbers of these offending birds is permissible; but the more the food habits of birds are studied, the more evident is the fact that with a normal distribution of species and a fair supply of natural food, the damage to agricultural products by birds is small as compared with the benefit.

It is bad to thrash a horse to make him increase his speed. Put the whip into the manger.



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Missouri State Experiment Station summarizes the value of the silo as follows:

1. Silage keeps young stock thrifty and growing all winter.

2. It produces fat beef more cheaply than does dry feed.

3. It enables cows to produce milk and butter more economically.

4. Silage is more conveniently handled than dry fodder.

5. The silo prevents waste of corn stalks in the manure when silage is fed.

6. The silo will make palatable food of stuff that would not otherwise be eaten.

7. It enables the farmer to preserve food which matures at a rainy time of the year, when drying would be next to impossible.

8. It is the most economical method of supplying food for the stock during the hot, dry periods in summer, when the pasture is short.

Business Notes

BEAUTIFUL CATALOGUE.

The catalogue of the Brownsberger Commercial College is one of the most pretentious books of its kind we have seen issued. It is filled with large engravings of scenes of the school and the garden about it. With these of course, is the matter descriptive of the various departments of the college which aims to give a complete business education to all who attend. Any young person having a desire to learn more of a thoroughly up-to-date commercial college should write Mrs. Florida Brownsberger, President, 953-957 West 7th St., Los Angeles Cal.

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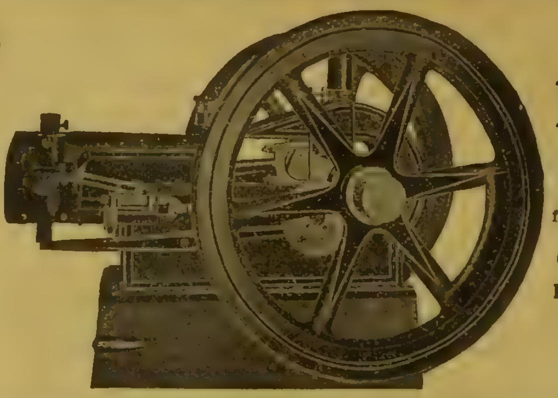

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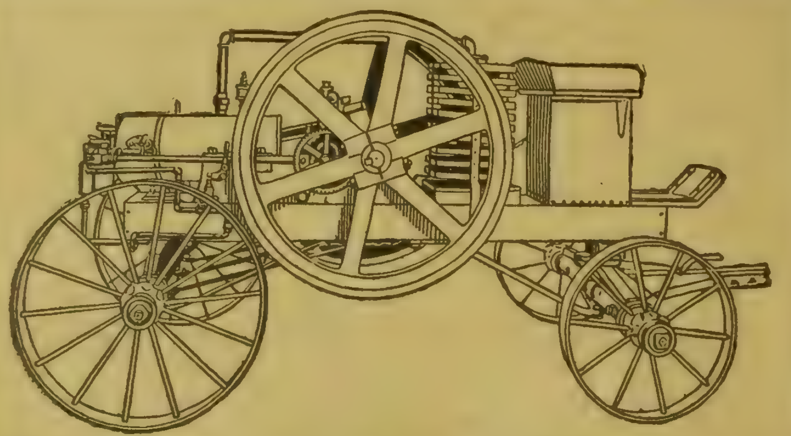

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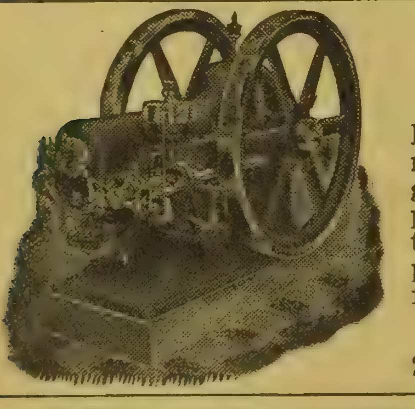

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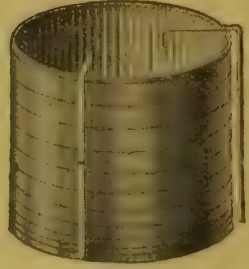

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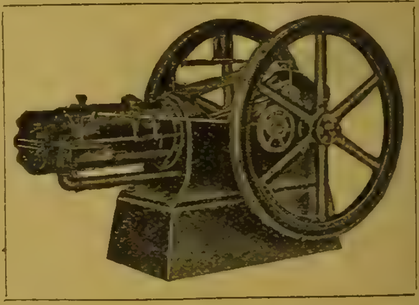

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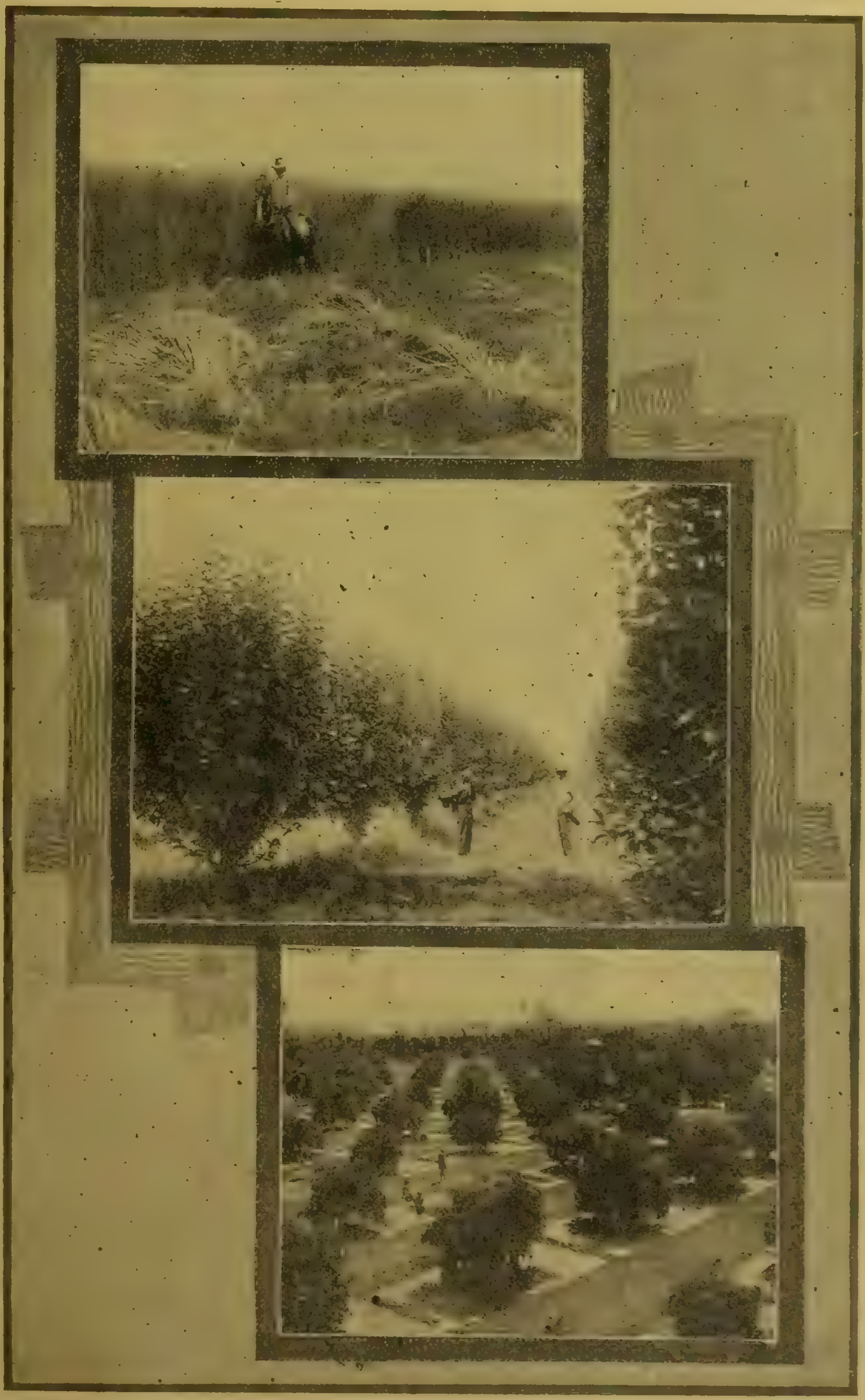
Los Angeles August 25, 1910 San Francisco

Farming Scenes Near Porterville, Tulare County



New Type Vertical Pump

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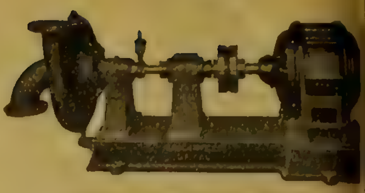

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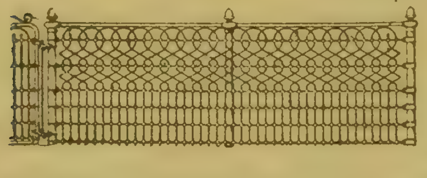

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19	21	16	?	18	9	15	18
20	15						
1	12	12					

of this paper are all familiar with the alphabet—A, B, C, D, etc.—but how many, if any, know this same old alphabet numerically?

For instance, the letter "L" is the 12th, "I" is the 9th, "S" is the 19th, and so on.

Children know the alphabet numerically better than "grown-ups." All should become familiar with the relative numerical positions of the different letters.

In order thoroughly to advertise one of "THE AMERICAN WEEKLY'S" strongest and most forceful mottoes, we have spelled it out, using numbers in the small squares instead of letters. Can you work out this motto? We have omitted the numbers in three of the squares marked "?," and you must supply this letter to make correct reading, when reduced by you to words, making the motto. There are five words in the motto.

Can you solve it? If so, you can share in the valuable prizes we will give.

A few minutes spent in working out the numerical alphabet, spelling out and forming into words this motto, is a harmless form of amusement as well as educational, and also gives you a chance to win a cash prize at NO COST TO YOURSELF.

The Prizes To the persons sending us the best and neatest correct solutions to this numerical-alphabetical puzzle we will give, ABSOLUTELY FREE, the above prizes in the order named. The decision will rest with the editor of "THE AMERICAN WEEKLY" and his decision will be final. There is no possible catch to this advertisement. We mean EXACTLY WHAT WE SAY.

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Reason for the offer? Of course, there's a reason. "THE AMERICAN WEEKLY," which is the best weekly newspaper in the United States, combining as it does all the features of a newspaper and a high-class magazine, wishes to make itself known to half a million more people. And a good way to make their acquaintance is to give away money.

Best in the U. S. "THE AMERICAN WEEKLY" is unique in the weekly newspaper field. It combines all the features of the daily newspaper and magazine—the farm journal, poultry paper and woman's magazine all in one. Eighteen big pages every week, equal to six magazines every issue.

THIS CONTEST CLOSES SEPTEMBER 30, and no letters bearing postmark after that date will be considered. Prizes will be awarded **OCTOBER 5th** and the winners will be notified by mail.

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New Sugar-Beet-Pulp Galore at
Los Alamitos Sugar Factory

Price 40 cents per ton f. o. b. cars or wagons. Takes the place of green grass as a milk pro

California Cultivator

Vol. XXXV—No. 8 Los Angeles, California, Thursday August 25, 1910 Subscription $1 a Year

Resources of the Agricultural Sections of Arizona.

Written for The Cultivator by Harry Welch, Secretary Phoenix Board of Trade.

ARIZONA has long been considered a section having the typically wild and wooly conditions of the border. To the minds of many the name has conveyed the impression of worthless hills and deserts. It may have been granted that there were here and there little productive nooks, but of such small extent that they could not overbalance the vast stretches of worthlessness. True, it was conceded that in the matter of scenery Arizona is the peer of any other section in the world, but while scenery is attractive to the tourist, it counts for less with the settler who wishes a home in a section which has wealth enough to supply not only the necessities, but some at least of the luxuries of life.

IRRIGATING AN OLIVE GROVE IN THE SALT RIVER VALLEY.

THE DATE PALM IN ARIZONA.

Four Factors.

To supply these, soil, water, climate, and the markets are the four cardinal points, and as they exist in the Salt River Valley of Arizona, insure its continued prosperity. In that valley there are 200,000 acres which may be irrigated by the waters held in the Roosevelt Dam. In addition there are 40,000 acres which may be irrigated by pumping. The power for this pumping may be secured by a system of power and irrigation lines all connected with the dam. Arrangements for utilizing this power have been made, and after supplying the required amount of electricity for pumping, there will still be 10,000 horsepower surplus which will be a great factor in adding to the convenience and comfort of the ideal farming community which is sure to spring up in that rich valley. There will be lights for barns and stables as well as for the homes, and the farm motor for feed cutting and work about the house will be a regular factor. Even traction lines are contemplated which will handle produce in a most economical way. The more enthusiastic maintain that the advantages of city life will be extended to the rural resident in the Salt River Valley.

The soil is the finest in the world. It has been compared to the rich delta lands of Egypt, to the black lands of Russia, and to the rich "polders" of Holland. There are now in cultivation over 150,000 of these rich acres, and this area is being increased rapidly as settlers from all parts of the United States learn of the opportunities for wealth to be found here. It is predicted that within a very short time 24,000 acres more will be crop producing.

Productions.

The staple crop is alfalfa, of which there is now growing over 75,000 acres. About half as much acreage is now producing barley. The alfalfa yields six to eight tons to the acre and the present price is about eleven dollars per ton. This gives ideal conditions for a dairying community, and a dairying community is invariably a rich one. Dairymen in this section have netted seventy dollars a year from dairy cows, this not counting the increase in stock. The farm unit is 160 acres at most, and no person will be supplied with water for more than this acreage. The tendency is toward smaller farms, the average being 80 acres.

Besides the regular dairies, great numbers of cattle are shipped in every year for fattening; there are over 24,000 there now. In addition there are brought in for shearing and lambing each year over 500,000 sheep, and one of our principal outputs is horses.

Sugar beets are extensively planted. This, with many other Arizona crops, beats the world for earliness. This year 25,000 tons of beets went through the factory, and the season was closed by July 21st. The average yield is 21 tons to the acre. One 80 acre ranch in the valley netted this year $55 per acre.

Fruits.

There are about 2000 acres in orange groves, about one-half being now in bearing. The fruit ripens exceptionally early and is all in the New York markets before Christmas where it has sold for an average of $5.10 per box. A very few lemons and grapefruit are bearing and have proven very profitable. Olives are a standard and an 80 acre orchard netted last year sixty dollars an acre. These lands suitable for orange and olive culture may be had at $200 per acre and equivalent prices govern sale of lands suitable for other fruits. It may be noted in passing that the date thrives exceptionally well, some of the experimental plantings giving bunches of ripe fruits weighing above 30 pounds.

In the valley there are approximately 3000 acres of fruits other than oranges. Besides the olives, there are peaches, apricots, and all kinds of deciduous fruits, together with grapes which have proven remarkably profitable early shippers. Berries are also beginning to be profitable. Melon raising has developed into a great industry and some of the finest in the world are shipped.

A Unique Industry.

In one industry the valley stands almost alone as to American production, that is, the raising of ostriches. In this Arizona is having a success equaling if not exceeding that of the home of the industry, South Africa. There are more birds on the ranches around Phoenix than in all the rest of the United States. We have over 7,000 ostriches in this valley, and the feather maker is thoroughly at home. Some astonishing figures show the profit in the industry. Estimates run from $25 a year per bird up to three or more times that amount. The advantage given by our climate is such that no protection is required, and the birds live in the open the year around. Ostriches at a very low estimate are valued at $400 per pair and their principal feed is alfalfa.

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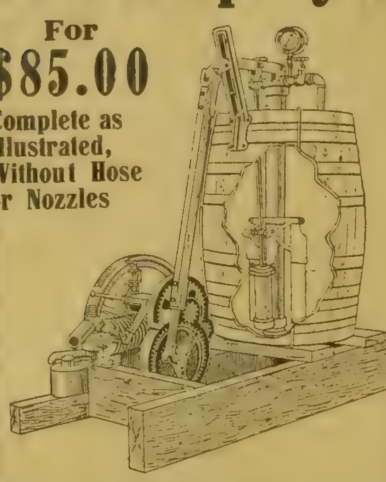

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1 pt. Taylor's Hydrated Lime mixed in a common mortar box
3 parts best Resublimed Flowers Sulphur
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Red Spider of the Orange

Hydrated lime is the ideal diluent and vehicle for the sulphur—and reduces the cost.
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Citrus and Sub-Tropical Fruits

PLANT PHYSIOLOGY.

WHEN walking through an orange grove, one can usually gather much concerning the condition of the grove from the appearance of the leaves. If a branch is diseased, or if the roots are affected, the leaves will testify to the diseased state, either by falling, or by their abnormal color or size. There is a close relation between the leaf and the vital activities of the plant, so that any condition that affects the latter is soon visible in the former.

The vital activities of the plant are those processes by means of which life is maintained in the plant body.

Transpiration.

The roots absorb the water from the soil; it is carried up through the plant body, and all except a portion that is utilized evaporates from the plant through small openings known as stomates or breathing pores. Hence transpiration is mainly effected by the leaves.

Respiration.

Oxygen is also absorbed from the air through these stomates; and chemical compounds within the plant are oxidized and broken down, and energy is liberated; the waste product, carbon dioxide, being liberated from the plants through the stomates. Hence respiration is mainly effected by the leaves. This is similar to respiration in animals.

Photosynthesis.

Carbon dioxide is also absorbed from the air through the stomates; water is absorbed by the plants through the roots; the sunlight shining upon the green coloring matter of the plant, known as chlorophyll, causes it to unite the water and carbon dioxide forming sugar or starch; and the waste product, oxygen, is liberated from the plant through the stomates. Photosynthesis is mainly effected by the leaves.

It will be noted that respiration and photosynthesis are exactly opposite processes; the former tears down the plant food and thus liberates energy; the latter builds up plant food and thus stores up energy. Respiration goes on at all times; photosynthesis only during the daytime.

Growth.

Raw food materials, mostly mineral salts, are absorbed from the soil; some of these are united with the sugar or starch formed during photosynthesis, and new living matter (known as protoplasm) is formed. The materials for growth are worked up mainly in the leaves. Hence the leaves take the chief part in nearly all the vital activities of the plant.

Root Disturbances.

In times of drouth the leaves are the first to show the lessened supply of moisture. They wilt and fall. This reduction of its evaporating surface enables the plant to equalize the amount of moisture given off by transpiration to the amount supplied by the roots. The same thing happens when the soil solution becomes so concentrated, from the presence of soluble salts, that the roots are unable to absorb the water, or when the roots are killed by poisonous salts such as bluestone, or when the roots are cut, from too deep cultivation.

The first effect of plant starvation due to the absence of soluble plant-food in the soil is shown in the leaves. They become yellowish in color and are undersized.

Branch Disturbances.

The best example of branch disturbances as affecting the leaves is withertip poisoning. The withertip fungus, when growing in a live branch, secretes a poison that spreads to the leaves, causing them to become of a sickly yellow color. Later the branches become defoliated and die from the tip backward.

Leaf Disturbances.

The leaves may show local injury from insects, fungi, spraying mixtures, or what are presumed to be physiological troubles. Too strong solutions of sprays, such as whale-oil soap or Bordeaux mixtures may cause leaf injury. The insects that injure the foliage may be divided into two classes—the biting insects and the sucking insects. Amongst the biting insects are the grasshoppers and the orange dogs. Both of these do much harm, especially to young trees, by chewing the leaves.

Amongst the sucking mites and insects the injury done to the leaf by the red spider, the purple scale, and the whitefly may be mentioned. The red spider causes a yellowish spotted appearance of the leaves, accompanied by a crimping and stunting if they happen to be young. The purple scale causes a yellowing of the leaves at the spots where the scales are attached. When present in large numbers they may injure the leaf to such an extent that it will fall.

The whitefly larvae are the most dreaded enemies of all. Living on the under surface of the leaves, they suck much juice from them. In addition they excrete honey-dew, which falls on the upper surface of the leaves below, and serves for the development of a fungus known as the sooty mold. The sooty mold forms a black mantle over the surface of the leaf, so that very little light can reach it. Since light is necessary for the vital activity known as photosynthesis, very little sugar or starch can be formed. Hence the plant is starved, and as there will not be much sugar available for the fruits, they have an insipid flavor. And since sugar is also necessary for the formation of the living matter (protoplasm) the growth of the tree is affected injuriously.

There are several diseases either due to physiological or unknown causes that affect the leaves. Perhaps the most important of these is the yellow spotting, which is confined to the leaves. This disease produces spots a fraction of an inch or more across that extend through the substance of the leaf. The structure of the leaf is so modified that all of its vital activities are affected. As a result the plant is much weakened. This allows the withertip fungus to attack the branches, from which further injury results.

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on the Latest Type of Deep Well
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Mr. Orchardist

I do not advise a complete analysis of your soil. This is the work that is responsible for the doubt now cast on the value of soil analysis. I will determine the

Chlorine, Alkali,
Total Soluble Salts,
Phosphoric Acid,
Potash, Lime, Magnesia,
Adequacy or Inadequacy
of Humas and Nitrates;

and these determinations will have reference to the materials now subject to the use of the plants. I will also give a mechanical analysis of the soil. This is all that is necessary to know for practical purposes and is much cheaper than a complete analysis. If the orchardists realized the profitableness of this information to them, everyone would want this work done at once.

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Chemist and Soil Engineer
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Melanose also attacks the leaves, as well as the twigs and fruits. It is not so harmful to the leaves as is the yellow spotting, though harmful in the same manner. In severe cases it may cause the leaves to fall.

Frenching is another leaf trouble. The only symptom of this disease is a lack of green color between the veins of the leaf. Without the green, this part of the leaf cannot manufacture sugar and starch; hence in cases where the frenching is severe, the tree will be weakened from this cause.

Withertip.

Is the withertip fungus injuring your grove? If so, now is the time pruning should be done. The dead and diseased branches if left on the tree will be a source of infection later in the year. Bloom dropping is caused by this fungus which "lives over the winter in the leaves, or in the twigs of the tree, or on fallen fruit. From these sources some of the spores find their way to an open bud, where the fungus grows very rapidly and produces myriads of spores. Bees, flies and other honey-loving insects, visit the affected blossoms, and coming into contact with the fresh spores, not only carry them on their bodies to almost every open blossom on the tree, but in crawling over the unopened buds they convey the spores to these as well. But worse still, the insects which have visited an infected tree carry the spores to other trees in the grove, and from these secondary infections, numerous other infections occur in time; so that hundreds of other trees that were free from the withertip fungus may become infected from one single tree with diseased blossoms."—Florida Agriculturist.

FIBERLESS MANGO.

The arrival in the market of the Cecil mango marks another triumph for the fruit king, in this section.

The new mango, like its big cousin, the Mulgoba, is free from fibre, has no turpentine flavor and it possesses a small seed.

The skin of the fruit is nearly an olive green, in color, free from spots and almost silky in texture. The flesh is firm, has the consistency of a well-ripened pear and can be sliced as easily as a banana. The large size of the new mango and its good shape make it possible to cut attractively for table use.

It was noticed yesterday that several people purchased the mangoes to get the seed for planting. This proceeding is not a bad one if the grower has no expectation of its coming true to type. Very rarely mango seedlings do have the characteristics of the parent tree and the chance is not a very risky one to take. However, the evolution of the fruit is being brought about by intelligent cultivation. Several growers in this section are acting the part of a Luther Burbank to the mango and the avocado and already the results of their work are showing up in a promising way.

From the stringy, yellow tar tasting little nubbin of the wild fruit to the fiberless, creamy, peach flavored product of its educated relatives is a long step, but considering the short time that the mango has been in cultivation in the county, the presence of the fine varieties here is something surprising.

To those who find the turpentine flavor not unpleasant, the well known variety called No. 11 is a great favorite. These ship well too, and are known in the Northern markets. But the time when the delicious Mulgoba and the Cecil mango are plentiful will be looked forward to with pleasure. Those on the market yesterday sold at 25 cents each.

These will doubtless be planted commonly for door yard decoration as there is no prettier shade tree in South Florida than the mango tree—and with the promising yield each year of fine fruit should be set out in generous numbers.—Miami, Florida, Metropolis.

DESTROY THE WEEDS.

Ditch banks, road sides, fence rows, and neglected corners are now in too many cases a perfect jungle of ragweeds, sunflowers, giant marsh elders and other members of the weed tribe. If left for a week or ten days too long, they will have ripened a full crop of seeds and scattered a large part on the ground.

Ditch banks are especially favorite places for weeds, and if neglected now they will soon have sown their seeds in the most favorable places to have them carried to every part of the irrigated fields later on.

This is the critical time, therefore, to act. Mow the weeds now; let them lie until dry enough to burn; then fire them when there is no danger from the fire.

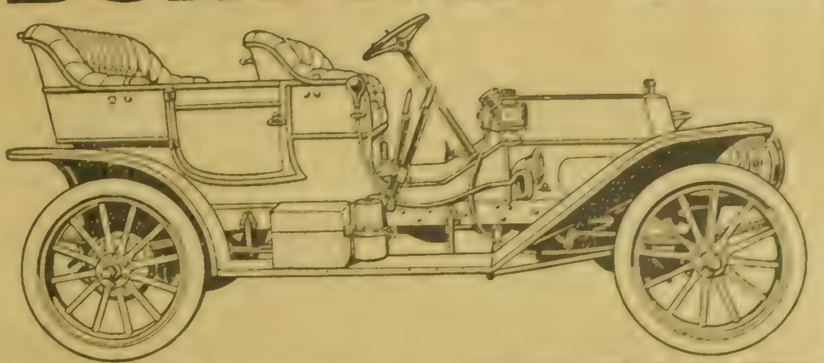
If left until spring, as is commonly the case, but few of the seeds are destroyed by burning the old weeds, as they have been scattered long before and are often protected from the flames by a layer of soil.—B. O. Longyear, Colorado Agricultural College.

The first we know of the navel orange, which is very valuable not only on account of its fine quality and taste, but also because of its being seedless, is of a single tree that was found growing on the northern shore of the Mediterranean sea. This was about the year 1565, or nearly 350 years ago. A monk in a monastery in that far away country painted a picture of the fruit and wrote a description of it, both of which may be seen in the library of the Roman Catholic University at Washington, D. C. Grafts of this tree were taken to Spain by the Moors several hundred years ago and from Spain the trees were carried to South America by the Spaniards.—Coleman's Rural.

A FRONT GATE.

Doesn't it always make you a little "out of sorts" to enter the grounds of a good farmer through a rickety old gate that must be held up while it is being dragged open? A day's work, with a barrel of cement, two barrels of sand and four barrels of gravel will make two big, strong cement posts for a wagon gate, and make them of such size that they will hold a substantial wooden or wire gate. Such posts will not sag, will not rot or burn out, and will have a much neater appearance for a gateway than do the out-of-date, rapidly decaying wooden posts. A neat, easily opened front gate adds much to the appearance of thrift about a farm, and increases the pleasure of living. What kind of a gate have you?—Fruit Grower.

DUROCAR The Car for the Farmer



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Deciduous Fruit Culture

APPLE CROP ESTIMATE.

SECRETARY C. P. Rothwell made the following report as to the condition of the apple crop in the United States and Canada August 1, 1910, as compared with August 1, 1909, at the annual convention of the International Apple Shippers' Association:

"An examination of this report for the first or New England group shows an increase in the entire section, except the unimportant state of Rhode Island, and for the whole group the entire crop this year promises to be about forty per cent in excess of last year.

"The central group, which is the largest producing group, shows increases in Ohio, Delaware and New Jersey over last year; Pennsylvania, Michigan and Wisconsin show considerable decline, with the increases not being sufficient to offset the shortage, and this group shows a decline from last year of five to ten per cent.

"The Middle West, or Ben Davis Group, shows the crop quite differently distributed from a year ago, Illinois, Nebraska and Iowa showing considerable decrease, with Arkansas, Kansas and Indiana showing considerable increase, and for this entire group gains substantially offset losses so that the present prospects promise a crop practically equal to one year ago.

Southern group.—The important state of Virginia shows a very decided increase over last year, with considerable increase in West Virginia and Kentucky, Maryland alone showing any decrease in this group; therefore this group will show an increase of fully fifty per cent over one year ago.

"Pacific group, or box Apple district, and Colorado show a decline in but one important state, Colorado, with a heavy increase in Washington and Oregon, and a heavy increase in the less important states of Idaho and Utah, with the important state of California showing a moderate increase of fifteen per cent, and for this whole group an increase of fifty per cent over one year ago is promised.

"Canada, not including the province of Nova Scotia, shows a decline over a year ago, early varieties promising relatively better than winter varieties. The Nova Scotia district promised, until recently, a good crop, but a very heavy drop followed shortly after setting time and present prospects are now for a light crop, poor quality and not to exceed forty per cent of a year ago in quantity.

"Upon the important question of quality, the quality is decidedly better than one year ago; New England, New York, Pennsylvania and Ohio all promise much better quality than a year ago, as does all of the southern group, while the Pacific group promises exceptionally good quality for the entire group, which will be the heaviest ever harvested.

"The Middle West, or Ben Davis group, ranges from poor to good quality, with a considerable portion of it with only fair quality. If present prospects are maintained until harvest time our country will have plenty of apples, all of better than average quality, which should have a good consumptive outlet at moderate prices to the consuming public."

Percentage indicates comparison with the 1909 yield.

	Per Cent.	Quality.
New England Group.		
Maine	120	Fair to good
New Hampshire	200	"
Vermont	110	"
Massachusetts	130	"
Connecticut	125	"
Rhode Island	90	"
Central Group.		
New York	100	Fair to good
Pennsylvania	90	"
New Jersey	225	Poor to good
Delaware	250	"
Ohio	140	"
Michigan	40	"
Wisconsin	20	"
Middle West or Ben Davis Group.		
Indiana	175	Poor to good
Illinois	40	"
Missouri	90	Fair to good
Kansas	200	"
Oklahoma	125	"
Arkansas	150	Poor to good
Iowa	15	"
Nebraska	40	"
Southern Group.		
West Virginia	120	Fair to good
Virginia	225	"
Maryland	85	"
Kentucky	175	Poor to good
Tennessee	100	"
Pacific Group.		
Colorado	70	Good
Idaho	300	"
Utah	200	"
Montana	90	"
California	115	"
Oregon	275	"
Washington	300	"
New Mexico	90	"
Canada.		
Canada not including Nova Scotia Province	70	Poor to good
Province of Nova Scotia	40	"

GREEK CURRANTS.

Mr. Geo. Robertson, Statistician of Fresno county, reports:

"It is stated in the newspapers of yesterday and today that the California Farmers' Union has received from its New York agent a letter stating that its correspondent at Patras, Greece, estimates the new currant crop at 14,500 tons, and the holdover at about 15,000 tons, which in their opinion is not sufficient to supply the demand of the world. On the face of it, these figures are impossible and misleading.

"There are 150,000 acres of currants in Greece, and during the last seven years the crop has varied from 135,000 tons in 1906, to 185,000 tons in 1908, and the quantity exported during that period has averaged between 115,000 tons and 125,000 tons.

"The Spanish raisin crop is below the average, and Smyrna Sultanas are also reported short. I expect to be in a position to give a preliminary statement regarding these crops within the next two weeks.

"I am making arrangement that will enable me to issue regular bulletins to the local press, from time to time, regarding the size and condition of the various crops which this county produces, for the information of growers, and others interested.

"These bulletins will include statistics regarding the foreign crops of raisins, oranges, lemons, peaches, grapes, olives, wine, etc., and also reports from other states which produce these fruits.

"It will take considerable time to organize and develop a regular system on these lines, and this year I am greatly handicapped by commencing late in the season.

"Later on, complete reports will be prepared covering the ground on all products and manufactures, and giving statistics on oil, minerals, county finance, taxation and other matters usually dealt with in the statistical reports issued in other states and countries, where figures on these subejcts have been found by experience to be indispensable."

PEACH STUDIES.

A very full and comprehensive study of peaches now grown in California and of varieties of this fruit that might, with profit, be grown here, was begun at the University Farm, Davis, in the spring of 1908. The points to be determined by this study are: First.—The standardization of the best of the varieties now grown in the state, so that representatives of the very best types of the varieties in question may be at all times available for propagation for comparison and for purposes of determination. Second—The illustration of the most desirable cultural methods and ways of pruning these standard varieties. Third—Best methods of handling the product of these well known varieties. Fourth—The development of peach varieties that are not now grown in California, but which may prove of value here, possibly supplanting some of the now popular varieties.

For the purpose of this study eighteen of the best known varieties have been planted in blocks of from ten to twenty-five. These plantings include those varieties that ripen early in the season and through the midsummer ripeners to those that are available very late in the year. Continuous observation of varieties of peaches is thus provided for and a determination of the first three points of this study made possible.

For the furtherance of the study of the fourth point noted there have been planted seventy-three varieties of peaches not now grown in California, but which have proved more or less valuable in other peach growing states. These varieties are represented in groups of from two to four of each kind. The outcome of these studies will be either the addition of valuable varieties to those now available in California, or the discarding of many as being of no value here. As an additional point in this fourth item new varieties are being developed as seedlings, cross fertilizing of known and valued varieties being practiced in the production of these seedlings.

HARVESTING THE FIG CROP.

Late advices from the fig-growing centers of the San Joaquin Valley are to the effect that the crop is about eight to ten per cent short, and all sold from growers' hands, and from packers' hands to the trade. The crop was cleaned up last spring before buyers in other lines had become active to any extent. Prices ranged from 2½ cents per pound to as high as 3½ cents, though very few figs were bought so high, this figure coming at the very clean-up. Probably 85 per cent of the crop sold for 2½, and the remainder at 3, 3¼ and 3½.

Packers now state that the question of a future market is largely up to the grower. The prices of this season were the best, on the average, paid within the past twelve years. This was partly owing to the short crop. While nothing like this for succeeding seasons is promised, packers do state that if the growers take proper care in packing and handling their crop, so as to maintain a good standard of quality for the goods, a profitable market for the future seems assured.

That portion of the crop grown in the drier regions of the valley where irrigation was not resorted to suffered some from sunburn, but that does not occur on lands irrigated. As a consequence there is a lack of foliage on the former trees and the side of the fig which is exposed to the sun has a thick skin. The size of the crop is estimated as follows: 3,500 tons of Wite Adriatic figs, 700 tons Mission or California Black figs and 300 tons of Calimyrnas.

"The pure food law has made impossible in the last few years the shipping of the poor grade of goods once handled as cooking figs. Now, these are good for hog or horse feed, and very little else. But, it is a good thing for California figs."

SULPHURING ALMONDS.

The California Almond Growers Exchange sends out the following regarding almond sulphuring:

"The softer the shell and the lighter the color naturally, the less sulphur. The heavier the shell and the darker the color the more sulphur is required. For a house holding from 400 to 500 pounds on suitable trays with slat bottoms, two pounds of sulphur burned with the house closed about 15 to 30 minutes for paper shells. Increase sulphur and time about 50 per cent for other than paper shells. Be sure your almonds are thoroughly dry first. The test is such a condition of the kernel that it will break but not bend. If in any doubt shell one here and there to prove it. Then dip them in water very quickly, or spray them with water to dampen the shell; or put them in your sulphur house and subject them to wet steam at not over 15 to 20 pounds pressure for 30 minutes and then you are ready to burn the sulphur. If you have steamed them you can sack them as soon as taken from the sulphur house. If the spraying has been just properly done you can do the same. If they have been dipped you will need to dry them well before sacking. If in doubt be sure and dry them. Of course where your association is going to do the bleaching you will not need to bother yourself about it."

Strong, Vigorous and Thrifty Walnut Trees

Well grown, true to name, and ready for immediate planting; of the New and Popular Variety, the

Placentia Perfection Walnut

A prolific and regular bearer of large, meaty, fine-flavored nuts, commanding from 2½c to 5c per pound more than the ordinary soft shells.

Choice trees, 3 to 14 feet, from 20c each and up; special low prices on lots of 200 and over. If contemplating planting a walnut grove, it will be to your interest to correspond with us at once, as the stock is limited and the price sufficiently attractive to clean it out quick.

Write today.

SAN DIMAS CITRUS NURSERIES R. M. Teague, San Dimas, Cal.

SOIL CONVENTION.

An important soil convention will be held in Los Angeles, October 3 to 8. Dr. Cyril G. Hopkins and Dr. F. H. King, noted soil experts from the East will investigate soil conditions in Southern California and lecture before the convention.

Realizing that the subject of soil fertility and soil management are the most absorbing problems that confront California fruit growers and agriculturists today, the University of California, through its Southern Laboratory at Whittier, has succeeded in attracting two of the best men in the East to study our soil conditions and give our growers the benefit of the very latest expert knowledge upon the subject.

Dr. Cyril G. Hopkins, head of the Department of Soils of the University of Illinois, has a world-wide reputation for his work on soil chemistry and plant foods. He is the author of an exhaustive work on Soil Fertility. After a short survey of the soils of Southern California, Dr. Hopkins will deliver five illustrated lectures upon the conservation of plant food and rational methods of fertilization.

Dr. F. H. King, formerly of the University of Wisconsin, holds an international reputation as a soil physicist. He is the author of several widely used text-books, such as "The Soil" and "Physics of Agriculture." His studies in Southern California will be devoted to the physical condition of our soils and irrigation and tillage practices. In five lectures before the convention he will discuss our methods, pointing out any prominent errors, and helping the grower to a better understanding of how he should use water, cover crops and other means for bettering the physical condition of his soil. Ample opportunity will be given for discussions after each lecture.

In addition to the above, there will be lectures by Professor J. H. Norton on the soil studies being carried on at the Riverside Station, and by Dr. Lipman of Berkeley, on soil bacteriology, and by others to be announced later.

The idea from the first has been to furnish a grand symposium on California soils, presented in such a way that our growers can secure the very latest information which scientific research has contributed to the subject.

All persons interested in the production of crops from the soil are urged to attend. The dates are October 3 to 8 inclusive. The place, Chamber of Commerce Building, Los Angeles.

FROST PROTECTION.

Reviewing the work in a recent Cultivator touching upon the frost question, Mr. Adams, Agricultural Editor of the S. F. Chronicle says:

"The California Cultivator devoted a great part of a recent issue to a symposium in respect to protection of fruit from frost. While this subject is of most importance to citrus growers whose products ripen in the winter, it is of vital interest to growers of early blossoming deciduous fruits, especially apricots and almonds. This article is very timely, for if growers do not consider the subject until cold weather is upon them, it will be too late to save the crop. This subject has been studied in various parts of the country and we now have the experience of twelve or fifteen years. Without reference to the measures which have been tried and abandoned as ineffective, it is sufficient to say that the only effective way is to light fires enough to warm the air surrounding the orchard. There are no frosts on windy nights, and it is theoretically possible to install power ventilating plants of such capacity as to create a stiff breeze throughout the orchard and protect the fruit by the methods of nature. It is probably not commercially practicable. The earlier attempts in "smudging," as it was called, were weak and puttering. Twelve or fifteen fires to the acre will not do the business on a cold night. The resolute way to attack the problem is to install an oil pot or coal basket ready to light under each tree and then light as many as conditions require, saving, usually, at least twenty-five fires per acre to be quickly started just before sunrise, which is the most dangerous time. The oil pots or baskets are hung on tripods with oil saturated shavings ready to light. Firing should usually begin and be heaviest on the windward side. The more generally the owners of neighboring orchards unite in protection work the less it will cost each and the better the results. If oil pots are used, about one gallon of crude oil per pot will be required. If not used during the season the oil can be returned to the container and kept for the next year.

"If coal is used about twenty pounds per basket, or one ton to the acre, will be required. The use of crude oil is not favored for citrus fruits on account of the soot which it deposits on the fruit. The soot is of less and perhaps no consequence in the case of almonds and apricots. Orchards can be, and in Sicily are, protected by a covering of lattice work or cloth, but it costs too much and is no longer used in this country. Many small fires are better than a few large fires. Where wood is plenty and coal or oil not conveniently available, wood or brush, or sawdust and coal tar, shavings saturated with oil, pine needles, or whatever will best answer the purpose and can be got may be used. Any fuel will do which will sufficiently warm the orchard and not injure trees or fruit. The correspondents of the Cultivator differ in their estimates of the number of baskets per acre which must be installed, some putting it as low as fifty. But such experienced and successful growers as N. W. Blanchard of Santa Paula provide a coal basket under each tree at the approach of cold weather and light as many of them as are required. And if they never have to light any they are glad. It is also desirable to install thermographs in all orchards which with the use of the telephones now common in fruit growing districts will enable the growers to keep informed of conditions over wide areas and do team work in meeting them. The cost of all these installations must be considered part of the necessary investment in orchards in frosty places. Professor A. G. McAdie of the Weather Bureau does not consider the problem yet fully solved. In still nights the heat rises directly upward and most of it is lost. That is why such growers as Mr. Blanchard put a fire under every tree. Professor McAdie hopes for some combination of a heater with a blower which will give a better distribution of the heat."

Apple packers at Watsonville find that the shook delivered to them this season makes a box a quarter of an inch narrower than the standard heretofore maintained.

Malthoid Roofing

Now is the time to roof your building.
Don't wait until the rain starts
and you are inconvenienced
by working in the wet.
Do the work while the conditions are
favorable and save yourself the annoyance
and disagreeable duty of being
compelled to hurry a job that requires
care and attention.
No matter what kind of a roof
you have or what kind of a building
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Our roofing experience will help you.
We will show you the kind of a
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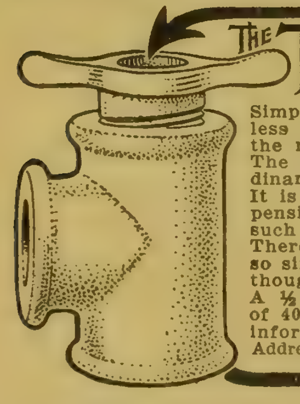

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A ½-inch valve sent post paid upon receipt of 40 cents. Quantity price, circular and full information upon request.
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Live Stock and Dairy

Dairymen and stockmen are requested to write of their experience. Mrs. Sherman is always willing to answer queries. and this, with experience of other workers, will make this department of greater value.

COW HEALTH.

By Mrs. Minna E. Sherman.

THE best authority tells us that both cows and horses gain close to half their bodily weight in the first twelve months of their lives. The importance of not stunting a calf's or colt's growth during the summer time must be remembered; it is so easy to forget them when out in the pasture fields. This time of year the first freshness has gone from the alfalfa, and flies are bad, so that the little ones that are just weaned, are often allowed to grow thin before it is discovered by the herdsmen. The weight of a horse when mature depends naturally on the breed. The weight of the mature cow in a great measure depends on her breeding, but it is safe to say for practical uses no cow should weigh less than eight hundred or more than fourteen hundred. There have been good cows that have fallen under or have exceeded these weights, but it is safe to draw the average at these points. There is little danger of alfalfa raised cows exceeding these weights, while there is great danger of the calves that are turned off skim milk at three months old to shift for themselves falling under weight.

California Grades.

I have been watching the common cows of California for some years and believe that most people who have observed them at all closely will agree with me that they are about two hundred pounds lighter than they were twenty years ago. The older dairymen in nearly every portion of the state agree with me in this. They also agree that these present cows are not much better than the older cows, but that they pay better owing to the lengthened out milking period, In former years the cows milked four, five or six months; now they milk ten to eleven months each year. Size in a cow means plenty of room for her bodily functions; it means good heart girth for a strong heart, and a good deep chest for lung room. Heart and lungs play an important part in handling and oxygenating the heavy flow of blood that swells the great milk veins of the modern dairy cow.

Curves.

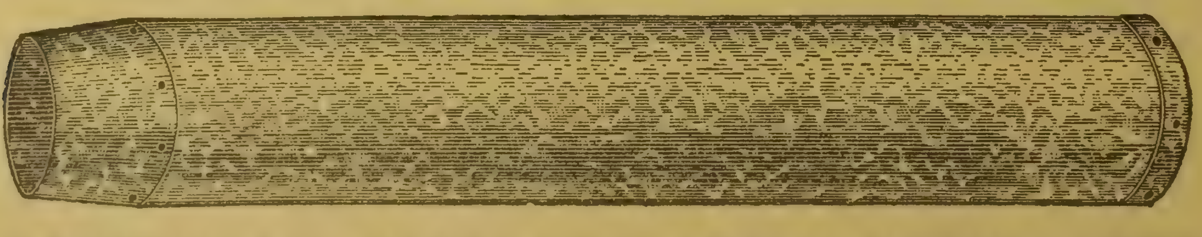
The four great dairy breeds may well be represented by a curve with the Jersey cow at one end and the Holstein at the other end. Next to the Jersey in bodily size and in richness of milk comes the Guernsey, with a larger frame, giving a little more milk a little less rich in butter fat. The most notable difference between them is the extremely high color of the Guernsey milk. Butter color is not needed in Guernsey butter at any time. These two breeds of cows can take care of a large amount of concentrated food in the shape of oil-cake and heavy grain ration without disturbing their digestions. Next comes the Ayrshire, a cow still larger, giving more milk, less rich in fat and able to care for a larger amount of rough feed. She is a hill climber, in spite of her size, and very active. At the other extreme from the Jersey we find the Holstein, a large, quiet, slow moving creature that can give quantities of milk of a low per cent of butter fat on a ration of green stuff without the use of any concentrated food to speak of. Alfalfa hay or green alfalfa or silage makes her a full meal. Now it can be seen from this that the cows best suited to the town lot are the cows that eat the concentrated foods and give the richer milk and are of smaller size, and it can be readily seen also that the dairyman will find his best returns from the breeds that fit into the feeds that he can most readily command.

Crossing.

The extreme difference in breeding makes even the crossing of high grades foolish, but if it is considered desirable to cross them, there is one rule that has been worked out in live stock breeding by careful observation. The larger animal should be on the male side if the best of acquired qualities are to be transmitted. The offspring of the male Jersey or Guernsey crossed on the female Holstein or Ayrshire is not worth as much as the reverse cross. The cross of the Brown Swiss on the Jersey produced in the first generation some good cows. The objection to crossing of breeds is not so noticeable in the first generation as in the second and third; the mongrel comes out rapidly in them. It is wise if the herd is a grade one to keep on breeding to the same breed of cattle until after four or five generations the mongrel tendency has passed away and the cattle are practically pure breed in their milking quality.

Selection.

The selecting by the eye of the good points of cows is not difficult in a bunch of common stock, but when it comes to selecting cows from a pure bred herd the difference is so slight that one may well hesitate and buy entirely on the blood lines represented in the individual. It seems a pity that the ordinary purchaser of stock does not learn that the word thoroughbred is never applied to cattle or swine. The breeder that is careless enough to advertise them



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SAVES WATER, GRADING AND TIME

The only scientifically constructed ***Surface Irrigation Pipe*** on the market. No round seams to leak, retard the flow of the water, or weaken the pipe. Cheaper than flumes. Easily handled. ***Will last a lifetime. The correct way to irrigate alfalfa.*** We make Riveted Water Pipe and Tanks. ***Write for illustrated catalogue.***

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Do your cows milk hard? Send 50 cents for teat expander. O. J. Weber Co., 225-227-229-231 East Sixth St., Los Angeles.

using this word is certainly not well up in stock, language and literature.

The only time the word thoroughbred should be used is in application to the running horse. Cattle, swine, and other live stock are pure bred, full bloods, or registered stock.—M. E. Sherman.

EXTERMINATING TICKS ON PASTURES.

The month of August lends itself well to the eradication of cattle fever ticks where a pasture rotation plan is used. By vacating a pasture during this month and keeping it vacant until July 1 of next year it may be freed of ticks, and if no tick infested animals are allowed to enter after July 1 the pasture will remain free.

Pastures from which live stock is removed for a sufficient time become free of ticks by a process of starvation, as the ticks can not live to maturity if they are unable to get upon animals. The time required for all ticks to die after the stock has been removed from infested fields and pastures varies considerably, depending on climate, season, and weather conditions. Experience has shown, however, that the period from September 1 to July 1 is sufficient, and this appears to be the most convenient time.

The advantage of vacating a pasture for the period named is twofold. Not only is the pasture freed from ticks, but its disuse during that time will probably cause less inconvenience and expense than at any other season, and it will be benefited by the rest and will have a better growth of grass the following summer. In some sections where pastures are utilized throughout the winter, to vacate would probably necessitate feeding the stock, unless the farmer is situated so that he can keep his stock on one pasture while another pasture is kept vacant. But it is also true that beginning with September there will be a more abundant supply of rough feed about a farm which can be utilized. August is a most favorable month for making a start toward freeing premises of ticks by the method suggested.

The animals should of course be free of ticks when they are again turned on the pasture in July. Where the owner has a small number of cattle, greasing or spraying them with Beaumont crude petroleum is a good way to rid them of ticks. When the number of cattle is large or when a dipping vat is convenient it may be more practicable to dip them.

COTTONSEED MEAL FOR HOGS.

A correspondent for the Rural World writes: "One of my southern customers has asked me for advice concerning the feeding of cottonseed meal to hogs. He lives in a cotton district and the meal is very cheap while corn is higher than in the corn belt. He also states that but little corn is raised and that grasses and forage crops are almost wholly unknown.

"I have had practically no experience whatever in feeding cottonseed meal to hogs. All that I ever fed was in a prepared feed that I used a few days. The result was the death of one of the best brood sows I ever owned. All that I can say will be from the experience and the experiments of others. The question might have been put to someone of the cotton belt, yet I believe that what I may say will be about the same as would have come from such source. It has been a matter of considerable experiment to determine the safest way to feed cottonseed meal. It seems to be the universal conclusion that while cottonseed meal is probably the cheapest feed on the list it cannot be safely fed by anybody who does not understand feeding it and even then there is great danger of losing the pigs. Some men claim that cottonseed meal can be fed safely to hogs for any length of time if not over a pound per day is fed.

"There arose an idea not long since that the product should be allowed to ferment before feeding. The result of demonstrations has led to prove that there is less danger in feeding the unfermented product."

THE DAIRY COW.

From Circular Issued by Dairyman's Co-operative Ass'n., Tulare.

Here is the foundation of your success in the dairy business. How many of us are keeping the dairy cow and no other? Of course on the feed and care given the herd depends a large portion of your profits, but feed and care will not make a good cow out of an animal that has a capacity of producing only 125 pounds butterfat per year. Did you ever stop to think that out of the odd 20,000,000 cows in the United States, the average cow produces only 130 lbs. butterfat per year, while again we have herds producing over 400 pounds of butterfat per year? Which do you prefer to keep, the 400-lb butterfat cow or the 130-lb? Of course the one that returns the most profit. What others have done you can do as well and probably a little better. I do not wish to advise you to sell your present herd and buy expensive animals from some of the registered herds, but what I wish to advise you to do is to test every individual cow and weed out and dispose of all that do not pay you a good profit.

Testing Your Cows.

The benefit that you derive from testing your herd is much greater than you would think, as you know then just what each cow is. There is no guess work about it. The Babcock tester never lies. Any ambitious and progressive dairyman should take pride in his herd. You would not for a moment think of buying a horse that would only do work enough to pay for feed, nor would you keep a man who could only do work enough to pay his board. Yet you are keeping cows that are actually running you in debt. This you may find to be a fact. With the Babcock test it is a very simple matter to tell what each cow is doing at any time. Whether you have one cow or one hundred you cannot afford to be without a tester. You can buy one for a few dollars, and by so doing may be able to save hundreds. Buy a Babcock test machine and go to your creamery and have one of the men there show you how to operate same, then you can test your whole milk, the skim milk from the separator, and also the cream you bring to the creamery.

When you have weeded out the poor cows from your herd, and you know what each cow is doing you are then in a position to do intelligent work in the line of breeding. Bear in mind the bull is half the herd, and should be looked after well, and do not let a few dollars prevent you from securing the best you can find. You will find it to be a good investment that will pay you in the end.

What I wish to bring out is the necessity of knowing each individual cow, and if she does not return you profit sell her—the sooner you get rid of such an animal the better. Go slow but keep everlastingly at it and you will win. Let your motto be: "Better cows, and a pure high grade cream."

After securing a herd of good cows, the next thing of vital importance is the care of your cream. What would you think of a man who has built up a fine dairy herd, secured the best bull he could find, gone to the expense of feeding, milking and caring for his cows, and then pay little or no attention to the care of his cream? Too often our dairymen seem to think that when they have the cream in the can that they have done well, and are willing to stop right there, and trust the Lord for the rest. If he had kept on a little longer and taken pains to have his cream thoroughly cooled and delivered at the creamery in the best possible condition his victory would have been complete.—David P. Johnson.

The lean pig and the young one, and plenty of his kind, are what the American public want. Juicy loins and fresh hams, chops that are not too fat, and frying pieces with little to suggest greasiness, are demanded; and it is identically what the producer can produce at most profit and in the least time.

Anthrax Cure, Milk Fever Outfits. See O. J. Weber Co., 225-227-229-231 East Sixth street, Los Angeles.

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The Kant-leak Kleet clamps seams water-tight without cement or large-headed nails. Makes laying easier than ever. Saves time. Protects against wind. Gives fine finish. Furnished in rolls of Genasco, when ordered.
Look for the trademark. Ask your dealer for Genasco. Mineral or smooth surface. Highest award, Seattle, 1909. Write for samples and the Good Roof Guide Book.
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Largest producers of asphalt, and largest manufacturers of ready roofing in the world.
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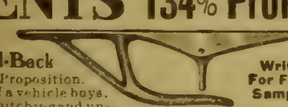

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BINDER Attachment with Corn Harvester cuts and throws in piles on harvester or winrows. Man and horse cuts and shocks equal with a Corn Binder. Sold in every state. Price $20 with Binder Attachment. S. C. MONTGOMERY, of Texaline, Tex., writes:—"The harvester has proven all you claim for it. With the assistance of one man cut and bound over 100 acres of Corn, Kaffir Corn and Maize last year." Testimonials and catalog free, showing picture of harvester.
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U. S. statistics show that 80 per cent of all horses are lame and that 80 per cent of the lameness is caused by hard and contracted feet. As a hoof softener, toughener, nourisher and grower there is nothing equal to
Eshelman's Wool Fat Hoof Healer
A horse's hoof is from 60 to 70 per cent water. Grease and water will not mix. There is no grease about Wool Fat. It mixes readily with water, is very penetrating, and while a great medicine of itself, it also acts as a vehicle to carry to the afflicted parts the other medicinal properties of the HEALER. It is absorbed into the skin and gives natural stimulation and nourishment to the hoof. There is nothing that can compare with it for this purpose, nor as a remedy for contracted hoofs, split hoofs, quarter cracks, mud fever, corns, grease heels, and for all kinds of sores and cuts anywhere on any stock. If you have tried it, you know that this is true. If you have never tried it, it will surprise you with its power as a healer and restorer. It is not a new remedy, but has been on the market in the East for many years, where it has given the greatest satisfaction.
4 oz. package, 25c; 12 oz., 50c; 32 oz., $1.00; 5 lb. pail, $2.00; 10 lb. pail, $3.50. It is easy of application. Directions with each package.
TRIAL OFFER.
We will send you a 2-lb. can, use it 15 days, and if satisfactory, send us $1.00. If not, write us to that effect, and you need pay nothing. We take all the risk, you just try it. Send for it today.
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a big knee like this, but your horse may have a bunch or bruise on his Ankle, Hock, Stifle, Knee or Throat.
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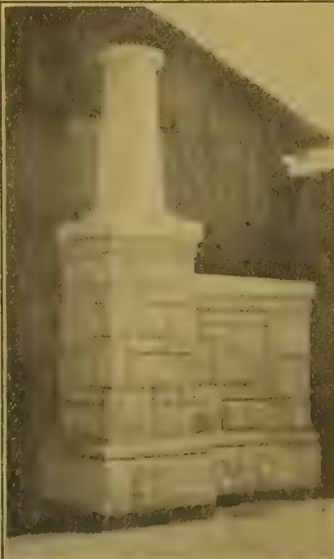

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DENATURED ALCOHOL FROM CANTALOUPES.

INQUIRIES have recently come to the Chemical Department of this institution regarding the possibilities of denatured alcohol production from cantaloupes. In view of the above, a chemical examination was made of some dead ripe cantaloupes during the past season.

According to our present knowledge of alcohol, it is produced from what we call reducing sugars or like bodies having the same formula. These sugars we know in the commercial world as dextrose, grape sugar and glucose, all meaning the same material.

There are different yields per acre of cantaloupes in different parts of New Mexico, depending on different conditions of soil and cultivation and planting. There are also different varieties of cantaloupes produced which would contain varying amounts of fermentable material, but the difference in the amounts of sugars will not be very great in the different varieties.

The cantaloupes analyzed contained 3.5 per cent reducing sugars. This would mean 369.6 pounds of reducing sugars per acre producing 10,560 pounds of cantaloupes. If all these reducing sugars were fermentable completely to alchol, (which is doubtful) they would produce 179.26 pounds of absolute alcohol (100%), and this would make 29.88 gallons of 100% or 200 proof alcohol. At 40 cents per gallon 29.88 gallons would bring $11.95. The cost of production of the cantaloupes and the manufacture of the alcohol are next to be figured, but it is hardly worth while to figure on these when we know that corn will produce per acre alcohol valued at $35.24, sugar beets $69.76, potatoes $55.92, sweet potatoes $44.80, and tunas $55.60. Corn gives by-products in the manufacture of alcohol, while we know of no by-products from the cantaloupes.

Roughly speaking, 5 tons of cantaloupes will bring gross receipts from alcohol production amounting to $12; one ton produces $2.40 worth of alcohol. On an average yield of Rocky Ford cantaloupes an acre brings in from $150 to $200, when the cantaloupes are placed upon the market. Now if the cost of production of these is $17 per acre and it costs more to produce alcohol from an acre of cantaloupes, which brings in this way only $11.95, it is quite evident that the production of denatured alcohol from cantaloupes would not be a paying business but would be a loss.

After certain complicated treatment, sawdust and various other woody products may be made to yield reducing sugars which are fermentable to alcohol. At the present time it has not been learned if cantaloupes can be made to produce more alcohol eventually by this complicated treatment, hence the common method was used in these calculations. However, if it were possible to ferment all the solid material in cantaloupes, one acre would bring only $35.85 worth of alcohol, one ton would bring $7.20 worth; and, after deducting the cost of production of cantaloupes, one acre would net $18.85 from which the cost of manufacture must be taken, leaving a very small profit, if any.

Thus, in conclusion it is quite evident that it would not pay to grow cantaloupes for production of denatured alcohol; neither would it pay to manufacture denatured alcohol from the waste cantaloupes.—S. R. Mitchell, New Mexico Col. of Agr.

THE FAMILY GARDEN.

The one great secret in being successful with the family garden is to provide an abundance of plant food in a form readily available to the growing plants.

Stable and barn yard manure are the best fertilizers at all times. Some of the commercial plant foods are excellent in their place, especially when it is desired to force some of the early varieties of vegetables, but their use requires that the soil be in a high state of fertility and that the gardener have an expert knowledge of their uses and functions.

Constant cultivation should be the rule for this will keep the soil in an ideal physical condition for the roots to grow in, besides keeping the weeds in check. Cultivate early and persistently and keep ahead of the weeds.

Allowing the weed seeds to germinate and then quickly destroying them by frequent cultivation early in the growing season, will save a large amount of work during the summer.

Eliminate all the old fashioned beds and plant everything in long rows so that most of the cultivation can be done with a horse.

There need not be an unpleasant amount of hard hand work if properly worked with a horse and cultivator. Provide plenty of room at the ends to turn around with the horse while cultivating.

Do not plan a larger garden than you can keep clean and well tilled. A small garden will supply an abundance of small vegetables for a large family.

After the soil has been well enriched and well fitted we are ready to plant. If the plan has been well worked out all that is necessary is to plant each variety at the proper time in its right place.

The family garden must be planne to suit the needs of the family and two families will agree as to the amount and kinds of vegetables they will grow.

If we will study out the time it takes each crop to mature we may be enabled to plan other crops to take their place as soon as they are consumed.

A few crops like long blood beets, egg plants, melons, onions, peppers, winter squash and tomatoes require a whole season for their growth.—Journal of Agriculture.

Tomatoes need to be acclimatized. The best results can only be obtained from seed that has become well adapted to the conditions of the locality. If your favorite variety cannot be obtained from a seedsman in your region, it is better to select your own seed, provided you have the means of keeping the strain pure.

The proof of scientific farming is the crop.

The Ornamental Garden

PROPAGATION OF PLANTS.

PLANTS are propagated by numerous methods, all of which may be classed under two distinct headings: First, by seeds or spores; and second, by the vegetative method or "division of the plant."

In the propagation of plants by seeds the little embryo plant wrapped up in the seed case is the vital part concerned in the production of a new plant. In propagation by division, a living bud or tissue capable of forming a bud is the essential part. These may be secured either in the roots, stems, or leaves. Theoretically, any part of a plant containing living protoplasm should be capable of reproduction, but in practice the various parts of many plants have never been propagated successfully by any method of division.

Seeds are the results of the sexual union of two individuals usually, and the resulting plant cannot be considred as strictly a part of either one or both parents, and it does not necessarily resemble either parent. The new plant resulting from any of the methods of division may be regarded simply as a continuationof the growth of the parent under new surroundings and with few exceptions resembles it very closely.

Seeds are commonly used in the reproduction of annual and biennial plants, especially where the exact parental form is not absolutely essential, as in the cereals, forest trees, seedlings for grafting and budding, etc. Division is used with plants that produce seeds sparingly or not at all, as the horseradish, banana, seedless oranges, apples, etc. Some plants are more easily and cheaply propagated by division, and this is the method always used when the exact parental form is desired in the offspring as in our fruits and many ornamental trees, shrubs and flowers. Seed is most commonly used with the ordinary farm crops, and also many garden crops. The process of propagation by this method is fairly well understood. Modern horticulture is very largely dependent upon the reproduction of exact parental forms by various methods of division, the most important of which we will attempt to briefly describe in this paper.

The various processes treated in the following paragraphs may be likened to surgical operations and, while plants are less highly organized and less sensitive than animals, they are, nevertheless, living beings. Violent operations, when necessary, should be performed with this fact in mind. A good sharp instrument that will make a clean, smooth cut, should always be used, and needless injury and careless handling always avoided. The presence of at least one healthy bud in the part taken for propagation will always be found helpful and usually essential.

The methods of propagation by division naturally divide themselves into two classes. First, those in which the part selected for reproduction remains a part of the parent plant until roots and leaves are formed, or until the new plant becomes self-supporting. These are the simplest and easiest methods and are very largely employed. In the methods of the second class the parts to be used are cut away from the parent in the beginning and placed under conditions favorable to the formation of the parts necessary to make the new plant self-supporting, or favoring its union with a part of some other plant.

Division of the Crown.

The roots and root stalks of many plants develop a large number of buds or growing points. These are often taken up and divided into as many pieces as there are eyes or buds and each part treated as an independent plant. Familiar examples of such divisions may be seen in the common methods of multiplying rhubarb, asparagus, cannas, and many other perennial herbaceous plants.

Suckers.

Suckers are simply shoots that grow upwards from the roots or underground stems, forming young plants around the parent. The shoot, together with a piece of the root or stem from which it grows, is dug up and removed to a new position. The red raspberry and blackberry are usually propagated commercially from suckers. Some varieties of the cherry and plum are also multiplied to a limited extent by this method. The propagation of woody plants in this way usually results in an increased tendency to form suckers which often become seriously troublesome in cultivation. The production of suckers will usually be stimulated by any cutting of the roots or a severe top pruning. Sucker plants usually have a poor root system and make an unsatisfactory growth for the first few years.—Ohio Ag. Bulletin.

A BEAUTIFUL GLADIOLUS.

An example of profit and pleasure to be had from a little plot of ground was shown us recently in the garden of Mr. Ernest Braunton, landscape gardener of Los Angeles. Mr. Braunton's garden is simply his playground; it is not large, but in it he is growing hybrids of the gladiolus which he has been working with for several years, following closely the various experiments and keeping tab on the parents which impart their own characteristics to the new bulbs.

One specimen which he has very closely resembles the amaryllis belladonna in color and shape of flower, and may be named the amaryllis gladiolus. It surely is a wonder for size, texture and coloring. A noticeable feature is the number of blossoms which open at a time. A mass of them in a vase would make a boquet of surpassing beauty. Florists who have seen this gladiolus pronounce it well worthy of the work Mr. Braunton has given to its creation.

In his work in hybridizing Mr. Braunton discards many bulbs. Others, because of color or certain other characteristics, are used to pollenize desirable varieties before being themselves discarded. The work of the plant breeder is most interesting, and when conducted with the skill and patience which Mr. Braunton is showing, adds greatly to the wealth of our flora.

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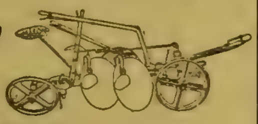
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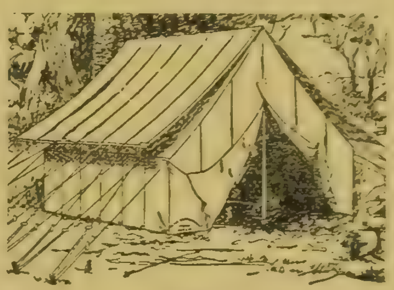
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Farmers National Congress.

The 30th annual session of the Farmers' National Congress will be held in Lincoln, Neb., beginning Oct. 6. Geo. M. Whitaker is secretary, 1404 Harvard St., N. W., Washington, D. C.

The Congress stands for extension of the parcels post, national aid for good roads, improving inland water ways, conserving natural resources especially soil fertility and forests, federal aid to secondary agricultural schools, federal aid to agricultural college extension work.

A Roland For An Oliver

A short horse is soon curried. The late Harvey Scott's fine paper, The Portland Oregonian, already feels the need of brains and judgment at the helm, as witness the following bit of Chesterfieldian apple misinformation it printed under date of August 16:

"Did you ever hear of Watsonville? Probably not. There never has been any particular reason heretofore why anybody should hear of it. The town lies in Pajaro Valley, California. We know all about Pajaro Valley. It is one of those forsaken spots where nothing grows but sand and conceit with here and there a spindling fruit tree, which is painfully kept alive by emptying the dishwater at its roots. The Pajaro Valleyites think their poor little imitation apples are the best in the world, because they have never been blessed with a sight of the real thing. Could they once gaze on the rubicund splendor of a Hood River Spitzenberg or a Rogue River yellow Newtown or a Yamhill county Jonathan they would have nothing more to say. But alas, it is their sad misfortune to dwell all their lives in Watsonville and see nothing better than those poor little things the people down there call apples."

Now wouldn't that jar you? But what are the real facts in the case? If we are to believe the wise statistical editor of our esteemed contemporary, the big state of Oregon shipped just 1000 carloads of good apples in 1909, while Watsonville sent out only 3502 carloads in the same period, and an additional 800 carloads were canned and dried, and 300 carloads manufactured into cider and vinegar. Local consumption was something like 300 carloads, making a grand total of nearly 5000 carloads, all of which was grown in the Pajaro valley—a comparatively small section of country. Yes, neighbor, we have heard of Watsonville, and before the moon again becomes full, others even in Oregon will have heard of it also. In the meantime, what is the proverb about the beam and the mote? Would it not seem a trifle more like good fellowship for the Oregonian to exploit the Oregon apple purely on its own merits, rather than indulge in chop logic and innendo against its neighbors?

Demanding Institutes.

We note in regard to the farmers institute work of the state Prof. Warren T. Clarke says, "These meetings are held in communities demanding them and manifesting the greatest interest." We also note that the communities which start out to secure aid from the national Department of Agriculture are the ones that usually do secure it. In other words, these forces for more profitable and more enlightened work on the farm come to the aid of those who realize their value. The speakers supplied at these institutes are almost invariably men thoroughly qualified to give information, and the men sent out from the Department to investigate conditions that need correction have trained minds that can more quickly and exactly determine cause and remedy of the troubles. Any community which has need of more up-to-date methods should "demand" of our University these advantages, then supplement the demand with right down hard work in preparation for the event and in inducing all to come out and take advantage of the opportunity offered.

An Inland Empire.

The daily press has often made reference to a section but little known yet having vast possibilities for agricultural development. This section lies along or near the Colorado river in eastern Riverside county and comprises the Palo Verde and Chucawalla Valleys; all told there are over 300,000 acres of magnificent land. As to possible profitable productions, it cannot yet be definitely stated, excepting that in the Palo Verde Valley alfalfa is proving exceptionally fine, and it is thought that all fruits of the desert sections will succeed. Chucawalla is supposed to be adapted to citrus culture, but actual tests have not been made. In fact, over 100,000 acres of land lies absolutely untouched, ready for water. A company has been formed which will conduct water into the valley.

Soil Convention.

On another page will be seen notice of the coming Soil Convention to be held in the Chamber of Commerce, Los Angeles, October 3-8. There will be discussions and addresses by some of the best qualified scientists in the United States. Prof. Cyril G. Hopkins, Professor of Agronomy of the University of Illinois and Prof. F. H. King of the University of Wisconsin, author of "King On Soils" will make addresses which will follow extended investigations of soil conditions in Southern California. The facts developed in these investigations will be the basis of the addresses. This convention will doubtless be a great treat to all who can attend.

Morton Memorial.

It has been proposed, and a bill has been introduced to the senate and referred to the committee on agriculture and forestry, to establish a school to promote the science and practice of forestry, to be known as the Morton Institute of Agriculture and Forestry. This is to be a memorial to the late J. Sterling Morton, formerly Secretary of Agriculture. The prominent features will be a museum for the reception of specimens, models, and other illustrative material, in addition to the research and experimental work. The proposition that the institution shall be located at Nebraska City, the former home of Mr. Morton, has caused extensive criticism because of the fact that in such a location it would be available to but few of the people of the country.

Soil Conservation.

Soil Conservation is the title of Bulletin 406 of the Department of Agriculture and is by W. J. Spillman, agriculturist in charge of Farm Management Bureau. Mr. Spillman condemns "exploitive" farming and urges increase in the number of domestic animals and insists that where land is rented the leases must be made for longer terms, and where the renter has not capital to provide sufficient number of animals other arrangements shall be made. The ranges are decreasing and the serious shortage of live stock must be met by the small farmers. The effect of live stock on the fertility of soil is well known to every intelligent farmer.

The liberal use of legumes is also urged by the author. In proof of their value it is noted that the vast exports of cotton seed meal and other rich nitrogenous feeding stuffs calls for every possible method of retaining nitrogen in our soils. In addition the increase of live stock on our farms will keep some of these feeding stuffs at home and increase the wealth of our own country. There is no royal road to soil conservation; we must depend upon our own resources and stop the export of these great factors in our soil conservation.

As a summing up of posibilities of increase in yield, Mr. Spillman gives deep preparation of soil, planting of well selected seed, frequent cultivation of crop during growing season, judicious use of commercial fertilizers, increased use of home produced fertilizers, and the growing of leguminous crops.

National Irrigation Congress.

A letter from the Secretary of the National Irrigation Congress at Pueblo, Colorado, informs us that preparations for the great meeting are practically completed. The Congress is to open on the morning of September 26th and will continue to and including the 30th. The National Irrigation Exposition will begin the week previous to the opening of the regular session which will be held the same week as the Colorado State Fair.

Forest Service Bulletin No. 81 of the Department of Agriculture touches upon the forests of Alaska. A colored map is given showing the location of forested areas, as are many photographs of standing timber and of log rafts which show that the timber of that country has no small part to play in its financial possibilities.

Agricultural News Notes of the Pacific Coast

Northern California

The dried peach market at Yuba City hovered round the 4½ mark.

H. P. Eakle of Woodland, Yolo county, has added exceptionally fine Shropshire rams to his flock.

Sonoma county claims that it will take first place as a wine producing county of California.

Glenn county is receiving large numbers of colonists taking up lands recently brought under the ditch.

Heavy shipments of cantaloupes were made from Gridley, Butte county to Oregon.

A farmers institute will be held at Gridley, Butte county, Tuesday, September 20th.

The Contra Costa county election on good roads bonds failed to carry the measure.

Prune growers at Chico, Butte county, report outlook for a light prune crop, all other fruits good crop.

The Alameda County Poultry Association will hold its next annual at Oakland November 23-27.

A San Francisco corporation has been formed to finance a large stock farm near Stockton.

Powdered milk is being manufactured at Central Creamery, Ferndale, Humboldt county.

The Almond Growers Association of Sutter county is discussing the proposition of building a warehouse.

The Sacramento Valley Sugar Co. reports the beet crop will be materially short of earlier expectations because of water shortage.

Poultry raisers at Stockton have organized the San Joaquin Association which will hold its first annual November 8-12.

Express rates on fruit from Gridley to various Oregon points have been raised from $1.50 to $2.25 per hundred.

A visitor in the berry fields of Sonoma county, reports seeing over a thousand men, women, and children picking berries.

Woodland, Yolo county, beet fields are in better condition than a few weeks ago immediately after the hot spell.

Anderson, Shasta county, is shipping a car of Bartletts daily.

Biggs, Butte county, has exceptionally good crop of Tokay grapes.

Ukiah, Mendocino county, is beginning a four weeks' campaign in the shipping of Bartlett pears; $20 to $25 is the price usually received by the growers.

Some dairymen of Ferndale, Humboldt county, are pessimistic as to the future of the industry because of monopoly which they fear will control the market.

The poultry show connected with the state fair to be held in Sacramento next month, September 3-10, promises to be one of the best fall shows yet held.

Solano county reports nearly all of this year's apricots picked up.

Wool growers at Dixon, Solano county, have closed up their clip at twenty cents.

Central California

Turlock fruit growers are making a campaign against ground squirrels.

Some of the Tulare county Tokay shippers have netted $2000 a car.

The pure food department is one of the features of the coming county fair at San Jose.

The upper Tule river reports exceptionally low water for this season of the year.

A fruit and vegetable cannery is the hope of producers at Porterville, Tulare county.

Tulare county claims to lead in the dairy industry of the San Joaquin Valley.

The crushing of wine grapes will begin generally not far from August 20th.

Santa Clara Valley prune men have information that the eastern market is remarkably bare of holdover prunes.

One shipper sent over $6,000 worth of hogs out of Hanford last week. The price paid was nine cents.

Pear orchards in the neighborhood of Tulare have proved the section almost a typical one for pear production.

Alfalfa sections of the San Joaquin Valley report good demand for alfalfa hay, but the grain hays are all in the dumps.

Entomologist Quaintance investigating the thrips situation in Tulare county reports an improved situation with promising outlook.

County Live Stock Inspector Lang of Tulare county is making a strong fight against the spread of glanders which has appeared in one or two sections of that county.

A Fowler raisin grower is perfecting a nickel in the slot raisin machine to be located on the streets of cities for selling raisins in small cartons.

Turlock, Stanislaus county, shipped a total of 257 cars of produce during the month of July. Of these 192 were watermelons and 45 cantaloupes.

The management of the Union Pacific Railroad is securing exhibits of fruits and other products of California to exhibit at various Eastern fairs.

The watermelon campaign of Fresno is nearly over and the output has been much less than last year. The average price per ton has been not far from $8.00.

A blight or "paralysis" is reported in the vineyards of Fresno county. A pathologist from the state experiment station is making investigations. It is so serious that it will reduce the present crop materially.

The split in the Tulare County Citrus Exchange has resulted in the withdrawal of several associations and the formation of the Lindsay Exchange. This will still affiliate with the California Fruit Growers Exchange. The officers for the first year are: G. S. Berry, President; J. H. Turner, Secretary. Other directors are Dan Overall; C. B. Fair, and F. S. Hostetter.

Southern California

Highlands, San Bernardino county, expects to have an alfalfa meal mill.

The Antelope Valley is becoming enthusiastic over the production of cotton.

Dry farming operations have secured good crops near Lancaster, Antelope Valley.

Coachella Valley bean planters are irrigating land in preparation for planting Pinks.

A good roadway from Brawley to San Diego is to be the effort of a number of Imperial Valley boosters.

Almond harvesting is on in earnest at Banning, San Bernardio county.

A conference was held at Santa Ana last Thursday to discuss the matter of Orange county's good roads.

Los Angeles and Orange counties have both begun the lima bean harvest.

The first day's run at the new creamery at El Centro, Imperial county, resulted in the production of 4500 pounds choice butter.

Horticultural Commissioner Essig of Ventura county, has issued a most valuable bulletin on Russian thistle and its control.

Assistant U. S. Attorney General Lawler is investigating the condition of the Colorado river and getting legal points which may be of value.

Professor Geo. Hussman declares that Imperial Valley will produce the earliest table grapes of high quality of any place in the world.

The Mutual Orange Association of Redlands is building a new packing house west of the city on the Santa Fe line.

The San Fernando Fruit Growers Association has let contract for fumigating all orange trees owned by members of the Association.

An experimental artesian well is to be sunk near San Jacinto to secure information as to possibilities of more water at great depths. The well will be sunk 1500 feet if necessary.

The spreading of winter storm waters over the sand wastes of the upper Santa Ana river has resulted in increased midsummer flow of the waters which supply Riverside.

An effort is being made to unite lima bean growers of four counties of Southern California to work along the lines of the Ventura association which was so successful last year.

The Sweetwater Dam above San Diego will be increased about fifteen feet in height at a cost of about $200,000 which will increase the capacity of storage about 70 per cent.

Imperial Valley water users held a meeting at El Centro last week and resolved to make an effort to form an irrigation district under California laws.

In the contest between fruit growers and the cement works at Colton, San Bernardino county, the cement people are endeavoring to show that the poor condition of the trees is due to last winter's cold.

The Coast

The Pacific Northwest will produce by far the largest crop of apples ever.

Many grain farms of Eastern Washington are to give way to stock farming, at least in part.

Wallowa Valley, Oregon, is to ship 600 cars of sugar beets to the factory at La Grande.

Cattle on the ranges near Palouse, Washington, are growing poorer because of drouth.

Thirty thousand boxes of apples will be produced in the White Salmon Valley near Bristol, Washington.

The forest service of the Hawaiian Islands is maintaining an experiment garden at Makiki.

Sheep have proven effective in the control of mustard which is a great pest near Walla Walla, Washington.

Several hundred of the regular troops aided in controlling forest fires in the Yellowstone National Park, Wyoming.

Nearly a half million acres of fine land is being reclaimed near Esperanzo, State of Sonora, Mexico, by a company of American capitalists.

The legislative committee of the state good roads association of Washington is studying the needs of the state as to new roads.

The man who refused to obey orders of a forest ranger at the time of the fires near Vancouver, Washington, was arrested and fined.

Western Oregon hay producers report the 1910 crop superior in both quantity and quality to that of last year.

The record drouth of Clarke county, Washington, is fifty days without rain, a "spell" of dry weather which is just ended.

Superintendent of Entomology Ehrhorn of the Hawaiian Islands has forwarded an aphis-eating ladybird to the California state insectary.

The largest hop warehouse in the Northwest, if not in the world, will be built at Salem, Oregon. It will be 100 by 500 feet.

The Columbia Land and Orchard Company has bought a large tract at Coulee City, Douglas county, Wash., and will convey to it ample irrigating water.

The loss from the great forest fires which have swept over Eastern Washington and Oregon, and a part of Idaho, has totaled almost ten million dollars.

American methods of producing hemp, especially in the introduction of labor saving machinery, are putting the industry on a new basis in the Philippine Islands.

Peach trees near North Yakima Washington, are producing a smaller fruit, often affected with purple spots and depreciating its value. It is claimed to be caused by cold weather of last year.

An alfalfa grower at Pullman, Washington, has a variety of alfalfa which has been growing on very marshy land, producing a rank growth. He believes it a desirable variety for such conditions.

Coulson's
EGG FOOD

If you were going to erect a large building, you would consult an architect—if you wanted some legal papers drawn up, you would go to a lawyer—because these men have made a special study of their respective professions.

The same principle applies to the feeding of your chickens. Presumably you have not the machinery or formula for making an egg food so that it will be just what your hens need.

That's why you should buy COULSON'S EGG FOOD. It is the result of years of study—it is scientifically mixed by experts with the right proportions of the various ingredients to give a balanced ration.

COULSON'S EGG FOOD means a healthy stock, with great laying power and eggs of quality. Saves you the time of mixing—provides a better feed—makes more eggs—means more profit, as COULSON'S EGG FOOD more than pays for itself, through making hens lay to their full capacity.

It is especially advantageous to use it at the present time, when the price of eggs is beginning to increase, and when also you are anxious to have your hens in good condition for the molting season.

Hens eat only what they like, but there are many foods they must have, and which must be mixed with their regular food so that they get the desired quantity. The only way the food can be mixed is by improved machinery—that's why you should feed COULSON'S EGG FOOD.

Get it at your dealer's; anyway send for our Catalog which tells about the famous Coulson products and gives valuable information about Poultry Raising.

Coulson Poultry & Stock Food Co., Petaluma
Germain Seed & Plant Co.,
Distributing Agents for
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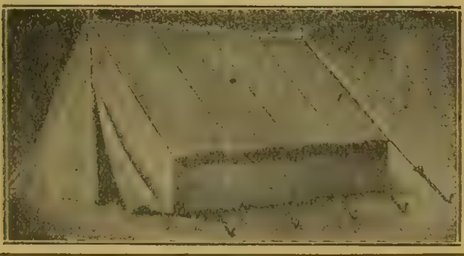

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Don't let your fowls get all run down during hot weather and molting time, but keep them in good condition.

EGG-MORE
BOOKLET

tells you how. It is free. Send for it. Send us addresses of 5 persons in your vicinity who have fowls, and we will send you postpaid, an Anchor Egg Separator. For 20 addresses, we will also send The Poultry Manual, a book well worth 50 cents.

West Coast Mill
Office and Salesroom
115 Winston St. - Los Angeles

Profit in the Poultry Yard

PREPARING FOR PROFITABLE WINTER LAYERS.

By Chas. Emery, San Jose.

NOW that the troubles, trials and losses of the practical hatching season are over, there is nothing pleasanter than to watch the young pullets grow and develop into beautiful, profitable laying hens. There is something particularly attractive about a young pullet that has begun to show motherly ways, and we like to hear her talk in her odd way of laying eggs and proving to us she is useful as well as beautiful.

The amateur poultry raiser sometimes gets impatient and thinks the pullets he has raised or purchased ought to produce the much sought for eggs. They eat enough and seem large enough. They get the best of care and attention. Why don't they lay? The simple reason is they are not ready. Fowls are living, organized beings and it takes time to grow and develop the organs of egg production, so as to bring into the world beings like themselves. The pullet has no thought of just making eggs for man to gobble up.

We want the pullets to develop and grow steadily in a healthy, natural way that shall insure perfect bones, muscles, nerves, blood-vessels, lungs and reproductive organs.

Fowls of the Mediterranean breeds, such as Leghorns, Minorcas and Andalusians, should be hatched during the months of March, April and May. They often begin laying at five months old. The Asiatic breeds, such as Brahmas, Langshans and Cochins, generally take eight to ten months before they begin laying. It is well to get them hatched as early as possible. The American breeds, such as the Plymouth Rocks, Wyandottes and Rhode Island Reds, begin laying between five and six months after hatching. March, April and May are good months for hatching this breed.

Too Early Hatching.

Pullets that are hatched too early and forced to lay in early summer, stop laying in September or October and moult like old hens. They are very likely to take a long winter vacation and not lay until the spring months.

After the sexes are separated, provide the pullets with sufficient shelter. Do not confine them too closely during day or night, for overheating in the hot sunshine or crowding in small, close quarters will very likely cause a weakening of the vigor of the fowls and may lay the foundation for disease. Give them plenty of good ventilation in their houses without dangerous drafts and provide ample shade in their runs or on the free range.

Small colony houses, which are large enough to shelter fifty to seventy-five pullets, are the most desirable for healthy development of the young stock. These houses should be provided with roosts and the pullets taught to roost as soon as they are placed in the houses. It is best as the pullets grow in size to regulate the size of the flock so as to give room enough so there will be no crowding. Exercise is a much needed essential and makes strong hardy pullets.

Green Food.

Green food in abundance is much needed and aids to good digestion. Young, green, tender alfalfa, cabbage leaves, rape, Swiss chard, kale, cow beets, green grass and young green barley, oats or wheat all make excellent green food.

A mash composed of two parts bran, one part corn meal, one part wheat or oat middlings, one part alfalfa meal, one part oil cake meal, one part beef scraps, seasoned with a little salt, makes an excellent mash for growing stock. This mash should be fed dry in self feeding hoppers and kept before the young stock all the time.

Skim milk is a good food to promote growth and early maturity. If it can be fed in large quantities the beef scrap in the mash may be omitted.

Dry granulated bone may be kept before the young stock because the phosphate of lime it contains is useful in building the fowl's frame.

Fresh green cut bone as laying time approaches may be used, one-fourth ounce per day at first and gradually increasing to one ounce per day for each pullet. This is a very highly concentrated food and care must be taken in its use so as to avoid bowel trouble.

Oyster shells, broken egg shells or clam shells may be used to supply the carbonate of lime of which the egg shells are mainly composed.

No Condiments.

Such condiments as red pepper, mustard, patented or pretended forcers of egg laying qualities should not be used unless you want to cause inflammation of the digestive tract and the organs of reproduction. The reaction is so great that it weakens the tissues and disease germs are sure to attack these organs.

The drinking water should be pure and fresh and see that there is an ample supply. Water that is stagnant or impure leads to disease. Rinse the drinking vessels out every day and give them a good scalding once a week.

Grit should be supplied in the form of sharp gravel or the commercial grit. Charcoal should also be supplied.

Lice and mites must be kept in check. Dust the pullets with a good lice powder. Whitewash the houses and once a month paint the roosts with crude coal oil.

Give your pullets good, wholesome grains, grit, water, charcoal, green food and mix in a good deal of sound common sense and you no doubt will have profitable winter layers.—Mercury-Herald, San Jose.

MIDSUMMER METHODS.

Clean your coops.

Sweep your yards.

Dust the chicks.

Spray every crack and cranny of the hen-houses.

Pour distillate down every crack in the brooders.

Sun and air the brooders every day.

Provide shade and fresh water for the chicks, old and young.

Don't stint the green food.

Protect them from weasels, etc., by fine screen wire.

F. Baldwin's WHITE LEGHORNS

1st Ckl. A.Y.P. Ex.

Won 9 prizes from 9 entries at A. Y. P. Ex. and 4 1sts at San Jose, '09. Bred as layers first. Stock any age for sale. Eggs $6 per hundred. Settings $2 up. Send for free booklet and prices. ***46 Washington Ave., San Jose, Cal.***

The Arenberg Brooder Heater and Stove

Perfectly simple, safe and cheap. Burns distillate, furnishes steady, free flame and easy to manage as brooder, heater or stove. Write for details. **H. F. ARENBERG**
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Fresh Air House.

Open-Front Colony House—Three Plans.

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Each of the above designs, and many more, is fully explained by the builder, and illustrated with one or several clear drawings. Anyone can follow the simple instructions. No theories, no extravagant ideas to mislead you, but the money-making, completed houses and coops prove what the Builders say is true. Read their own words and learn how they do it. One plan will pay for the book.

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We most certainly recommend this book as one of the best of its kind ever published and our readers should avail themselves of this opportunity at once to get a free copy as above.

Enclosed $1.50 for club order with new book.

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POULTRY QUERIES.

Raisins for Hens.

I was told that raisins are good for laying hens. If so, what portion of the ration should be raisins?—A Subscriber, Devore.

If the hens are receiving grain feed, one half of it can be replaced with raisins. More raisins than half seems to make the hens take on fat too rapidly and they do not lay as well.—M. E. S.

Moulting.

My White Leghorn pullets four months old are losing their feathers, though they are not yet laying.—T. D., Auburn, Wash.

We doubt not your pullets are entering the regular moulting and all you need to do is to feed a fairly rich ration until they take on their new feathers and begin laying.

Overfeeding?

What ails my chickens and turkeys? They seem to go to sleep and drop off the roost and sleep from 12 to 36 hours. They seem to be perfectly healthy, combs red and in good order. I have opened some of them and examined their gizzards, crops and livers and found nothing wrong. I lost 26 chickens young and old and ten half grown turkeys in three days. —Mrs. E. E. Christen, Wasco.

Your description is not sufficiently specific to enable us to give an intelligent reply. Your trouble may be due to one or several things. Limberneck furnishes some of the symptoms you describe, namely, a tendency to mope about, sit on the ground, etc. Indiscretions in feeding, impure animal foods, a one-sided ration, are some of the causes. Worm parasites also produce it. The disease may be prevented by careful feeding, and the removal of sources of infection. Good sanitation, wholesome food, and pure water are a winning triumvirate in the chicken yard.

Enlarged Crop.

We have two turkeys with very much enlarged craws. Is there any help for them or should they be killed. They are fine layers but the craw seems to get larger every day. One of them now nearly reaches to the ground. At what age do Indian Runner Ducks commence laying?—Mrs. W. L. Bailey, Tulare.

Your birds are suffering from either crop bound, or an enlarged crop. In the former, relief is obtained by giving castor oil or warm water; knead contents of crop and try to force out gradually through the mouth holding the bird's head down. If this fails, open the crop, removing a few feathers and making a short incision through the breast at the top; remove the congested contents and sew up, exercising care not to sew skins together. Enlargement of crop can be treated by cutting away a part of the skin and sewing up—not often worth the trouble, excepting in cases of valuable breeding birds.

As to laying age of Indian Runners will some duck breeder inform us?

Air Sacks.

I have a thoroughbred Minorca chicken about two months old which has a large swelling on the right side. Seems to be only air and we opened it and let the air out, but whenever the chicken peeps the whole side immediately fills with air again. Would be glad to have you answer through the Cultivator as to what is the disease and if there is a cure for it. I find so many helpful things in the Cultivator.—Subscriber, San Dimas.

This is not an uncommon complaint, the air sacks forming under the wings. As for a remedy, we know of nothing better than lancing; be sure the incision is sufficiently severe to prevent the skin again uniting shortly afterwards.

Several Difficulties.

I have some Barred Rocks that even before being fed take spells of running backward, fall, then jump up and eat well, act all right for a while, but finally die. The hens have been troubled with bowel trouble, but will they lay if not well?—W. R. P., Devore, Cal.

Birds evidently suffering from apoplexy, due to a rush of blood to the head, caused by over-eating, violent exercise, fright, extreme heat; rarely observed until victim is too far gone for treatment. Some breeders bleed from vein under side of wing; others give two drops croton oil. Severe cramp and rheumatic troubles at times give forth similar symptoms. It goes without saying that the healthy hen has the ailing one beaten in the production of hen fruit, provided always that both are from good laying strains.

ALFALFA FOR GROWING POULTRY.

The California State University gives an analysis of alfalfa which shows that alfalfa is a wonderfully nourishing food, but it also gives a very large percentage of fiber, supposed to be mostly indigestible. Now the Department at Washington gives an analysis which says that a large percentage of this fiber is also digestible, thereby giving alfalfa meal about the same nutritive value as whole wheat. This seems, at first glance, impossible, but to test the matter thoroughly, as he has a habit of doing, D. H. Hammons, of the Pacific Poultry Plant selected three chicks at three weeks old, and kept them by themselves and fed them practically nothing but alfalfa meal, to which he added a little beef scrap and green alfalfa ad libitum, but not one grain of any kind, or mash of grain. At four months old these birds are actually the pick of the flock, large and strong products, and handsome, in fact fit for the showroom, and the pullets looking as though they might soon begin to lay. He has another pen in course of experimentation, and is very enthusiastic about the saving this feed will effect. He raises his own alfalfa and contemplates putting in a mill to grind the meal.

ECONOMY IN FEED.

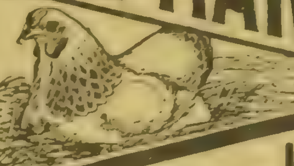
If we feed chicks, or young poultry of any variety, on an exclusive grain diet, we feed the most expensive diet so far as price is concerned, and fail to get the best growth. Give raw potatoes, onion tops, lettuce, dandelions, any form of palatable green food chopped up, with or without the mash.

If we expect to raise chicks with the hen, we know we must treat her for lice; if we fail to get lice powder or kill until the chicks are infested, we will lose some chicks.

If we are to feed farm poultry economically, we must feed what we grow on the farm. Now is the time to make out our ration for next year. There is profit in growing your own feed, and marketing the finished product.—Wallace's Farmer.

Avoid sloppy foods in hot weather.

EGG MAKER



I Have Ten Hens and Get Ten Eggs Each Day

by feeding "Lee's Egg Maker." Without waiting another day, go out and count your hens—count them carefully. For a week keep an accurate daily record of the eggs you get. The guarantee below means *you*.

WE GUARANTEE

that no matter what you are feeding, and regardless of the number of eggs you [illegible] at the present time, if **Lee's Egg Maker is added** to the daily ration [illegible] the increased egg yield [illegible] will more than pay the cost of the Egg Maker, cost of labor required, and **100 per cent profit** on said labor.

We don't care what your hens are doing *now*, we ask you to buy Lee's Egg Maker on our *guaranty* of an *increased* egg-production at a *reduced* feeding cost. Could we make you a better proposition?

The amount of good *digestible* protein is what counts for results in poultry feeding, and America's big feeders say Lee's Egg Maker contains more *digestible* protein than any other poultry food they can buy.

Lee's Egg Maker is almost entirely a meat food and with an actual tested protein feeding value in *excess* of *80* per cent, and you'll find in it the essentials entirely lacking in other prepared poultry food. The best feeding authorities in the country endorse it—and *use it*. *You* can't afford *not* to feed it, whether you have 10 hens or 1000, the proportionate profit would be the same.

Price: 2½ lb. pkg., 25 cts., 25 lb. pail, $2.00. Ask your dealer or send direct to us. We pay freight in 100 lb. lots.

Come in and see our new 1911 line of Mandy Lee Incubators and Brooders at our newly opened Los Angeles branch, 225 West 2d St.

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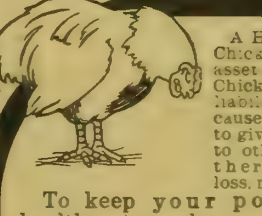
OMAHA, NEB. LOS ANGELES, CALIF.



A Healthy Chicken is an asset; a sick Chicken is a liability: because it is apt to give disease to others, it's therefore a loss, not a gain

To keep your poultry healthy—to make every hen an asset, regularly use in the feed twice a week,

Coulson's

No. 3 Condition Powders

Give it to well chickens to KEEP them well, give it to sick chickens to MAKE them well.

Helps chickens to digest and assimilate all their food, makes hens lay right up to molting and starts them laying quick after the molting season.

At your dealers Write for our catalog of Poultry Products.

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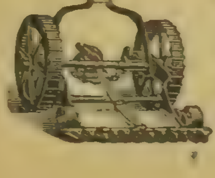
Buff Orpingtons Exclusively

Sullivan's Buffs won 109 prizes this season. SPECIAL SALE for 30 days: $3.00 eggs now $1.50; $5.00 eggs now $2.50 per set. Stock cut in proportion. Yearling Cocks: $4.00 now $2.00, $5.00, now $2.50; $7.50, now $3.75; $10, now $5.00.

Mr. & Mrs. W. S. Sullivan
AGNEW, Santa Clara County, California



THE CLIPPER

Will cut tall grass and weeds and do all the trimming along the walks and drives.

Your dealer should have them—if he has not drop us a line and we will send circulars and prices.

Clipper Lawn Mower Co
Dixon, Illinois.

Irrigation and Forestry

FOREST FIRE PROBLEM.

By G. M. Homans, Sacramento.

IN one of the San Francisco dailies of August 17, an editorial appeared attacking the practice of patrolling and preventing forest fires from raging through the forested lands of the country. The article advances the theory that the debris of the forest should be burned at frequent intervals, referring to the example set by the "untutored Indians," as a measure of protection. Another writer expounds the same theory in the August number of Sunset.

It seems that these writers have become slightly tangled in the meaning of forestry, and have lost sight of what it is endeavoring to accomplish. They have evidently misconstrued its meaning and aim to be the protection of standing, full grown, saw timber alone. The term is much broader than this. Those who are practicing forestry are bending their efforts, with marked success, toward the protection of the young, growing trees which are developing into valuable saw timber, as well as the protection of the matured timber from destruction and waste by fire.

If the present stand of matured timber was the only thing to be considered and protected the problem would be an exceptionally easy one, and the theory devised by the above-mentioned writers could be used from a practical standpoint. However, the problem confronting the lumbermen and the foresters of this country is more than the protection of standing matured timber. The problem is to prevent the now standing merchantable timber from destruction until it can be converted into lumber and also to prevent the land on which these valuable forests are now standing from becoming a barren waste, a sea of brush, after the mature timber has been utilized.

When one stops to realize that a yearling pine or fir tree is no longer than a match and is so tender and sensitive to external conditions that the least heat from a fire, even though that fire is no larger than that made by a burning pine needle, will kill it, when it is considered that a three year old tree will be killed by the heat thrown out by three pine needles burning at its base, the advisability of burning over the forest floor takes on a different aspect.

How are we going to burn over the forest areas of the country at frequent intervals and at the same time provide for the development and growth of the new stand of young trees which should take the place of the saw timber which our mills are consuming, thus preventing the land from becoming absolutely worthless?

Through the methods used by the "untutored Indians," and through the carelessness and mismanagement of the old time lumbermen through the United States there are thousands of acres of land which once produced valuable forests, but are now absolutely worthless, producing nothing but brush.

There are other vast areas where only the old mature timber is standing—where successive fires have destroyed all the young growth.

The foresters of the country are now endeavoring to reclaim these barren wastes, through natural and by artificial means, to young forests and to assist the young trees to get a start on the areas where only scattered mature timber is now standing.

The only practical method of accomplishing this aim is to keep fire out until after the young forest is past the stage of extreme sensitiveness to heat, at which time the forest policy will, no doubt, be so established that sums of money can be appropriated for the purpose of going through certain sections of forest land, small areas at a time, piling the fallen logs, branches and debris, and burning these piles in a practical, systematic manner at the right season of the year, just as the U. S. Forest Service is doing today in all timber sales after the logging operation has been completed.

It is certain that from a business standpoint and from every other point of view, the forest lands should not be left a worthless, fruitless desert after they have been stripped of their present valuable product. What are our mismanaged cut-over lands of today producing? What will the lands which now bear only the mature trees produce after they have been logged over? How can we increase the value and productiveness of both these classes of lands? Simply by protecting them from fire.

In two hundred years from now lumber will be just as much in demand, if not more so, by the citizens of this country, as at the present time. There are no new forests to discover and to utilize and so why should we as the present occupants manage our lands and forests for the selfish aims of today alone, when by a little care and with a comparatively sight expense we could leave the country still producing and our forest lands in such a shape that our mills can return to these selfsame lands for a second, a third, and innumerable cuts in the future, after we have completed our span. Such a thing is possible, but not through the agency of fire, even as a servant, applied in the manner recommended by a few, because the growing stock and the nucleus of the future stand has not been considered in the protective measures.

WEALTH FROM IRRIGATION.

The uneven distribution of rainfall in the Willamette, Umpqua and Rogue River valleys, gives a typical humid climate during the months of October to May, inclusive, and during the principal growing months of June, July, August, and September, almost truly arid conditions exist. Under the agricultural practices of the past this condition was beneficial rather than otherwise. Extremely mild winters, early, moist springs, and dry summers were ideal for the production of grain and as grain was a remunerative crop, all farms were given up to its production. Fertile as these soils were at the beginning, they could not indefinitely continue to produce paying crops under the abuse they had suffered. Productiveness deteriorated, slowly at first, until lands that once produced 60 bushels of wheat per acre now produce only from 10 to 12 bushels.

As wheat at 12 bushels per acre is not a paying business, agriculture in that section is undergoing a radical change. Diversified farming is taking the place of the one time single-crop system. But although the dry season was helpful to the wheat grower, permitting the harvesting of this crop, which had grown during the moist mild winters and warm springs, in the best possible condition, it retards the growing crops which must be planted in the spring and harvested in the fall. They suffer for lack of moisture in a climate where for 90 days not enough rain falls to do more than replace that evaporated. Forage crops, root crops, vegetables, hops, and fruits must have moisture, and that is just what the climate of Oregon does not provide, during the best growing months of the year. What nature does not provide man must, or the problem confronting the farmers of western Oregon remains unsolved, or rather solves itself adversely to the welfare of that once prosperous section. Right here, the U. S. Department of Agriculture, through its Irrigation Office, undertook an investigation to determine the feasibility of irrigation as a means of furthering intensive agriculture in this region. The results have just been published by Secretary Wilson in Bulletin 226 of the Office of Experiment Stations, and the conclusions are most encouraging to the dwellers of those beautiful valleys.

With the need of irrigation during the dry summer months proven, and the great value of irrigation demonstrated, the feasibility and practicability of developing it on an extended scale was conclusively shown, as there is an abundant water supply, the general topography especially favors a cheap economical delivery of it to the land, and the soils are adapted to the growing of crops under irrigation.

Since the summer droughts and their effects are the main obstacle to normal development of the farming industry, there remains no doubt that the effect of the general adoption of irrigation will be to solve almost completely the agricultural problem that has confronted the farmers of western Oregon.

FARMERS INSTITUTES.

By Warren T. Clarke, Berkeley.

Farmer's Institute work in California was begun in the year 1892. The effort at first was financed by the University of California through appropriations from the general funds of this institution. This provision of all necessary funds by the University of California was continued for eleven years. In the year 1903 the State Legislature passed an Act entitled "An Act authorizing the Regents of State University to hold Farmers' Institutes, making an appropriation therefor, and prescribing the duties of the Controller and Treasurer in relation thereto." The sum of six thousand dollars a year for two years was appropriated for the specified purpose under the Act. The Legislatures of the years 1905 and 1907 reenacted this Act without change. The work of Farmers' Institutes and University Extension in Agriculture, owing to this generous provision of money by the state, was greatly enlarged and placed upon a more satisfactory basis than had been possible heretofore. Institutes have been held not alone in those parts of the state that were easily accessible but the work has also been done in the most remote farming sections. Distance from railroad transportation has been no bar to the effort and the work of University Extension in Agriculture was made, in some or all of its phases, to be of state-wide value and importance. The very fact that the Farmers' Institute movement was in a period of growth and expansion had the effect of creating new demands upon those engaged in the work, and, at the time of the meeting of the State Legislature in 1909, the Act previously referred to was again enacted, but with the appropriation increased to ten thousand dollars a year. This increased appropriation for the work of University Extension in Agriculture passed both the Senate and Assembly without opposition and received enthusiastic approval from the government of the state, while in the comments by the press and by those prominent in industrial and educational circles the work of Farmers' Institutes was highly praised for directness and efficiency. Regular printed reports of the work done have not been made, owing to the fact that funds for printing purposes have not been at hand. It seems appropriate, however, at this time, the end of the first year's work under the larger appropriation, to briefly point out some phases of the work and to indicate what has been done in the year just ended.

Summary of the Year.

One hundred Farmers' Institutes were held, covering 132 days, and were divided into 297 sessions. A total of 29,108 people attended these institutes and 25 state lecturers and 183 local lecturers addressed the meetings. In addition to these lecturers ten speakers from the College of Agriculture devoted a total of 134 days to the work of Farmers' Institutes.

One hundred and fifteen reading course students were registered from thirty-eight counties of the state.

The Demonstration Train was in service sixty-eight days, covering 3,436 miles of road and making 223 stops. A total of 73,663 people visited the train.

Teachers to the number of 1,200 were approached by letter on the subject of nature study. Ten thousand circulars on school gardens were sent out, while seventy-five city and county superintendents of schools were corresponded with on the above subjects. Three schools were given personal supervision in garden and agricultural work while twenty-four teachers were helped in these endeavors by letter and personal visits. In addition to all this a number of addresses were given at Teachers' Institutes and Teachers' Associations.

This bare recital of figures indicates in an imperfect way the activities of the division of University Extension in Agriculture for the past year. The great demands that the work has made upon the teaching force of the College of Agriculture should be noted, yet it has brought the University staff into very close personal relations with the people of the state in a way that has proved very acceptable to all concerned.

A suit begun by landowners at Kingsburg against the ditch company to prevent flow of water in ditches which were not lined to prevent saturation of the ground, resulted in damages being secured by property owners.

Bees and Their Care

LESSONS IN BEE-KEEPING FOR THE FARMER.

By J. G. Gilstrap, Inspector of Apiaries, Stanislaus County.

This is the third of Mr. Gilstrap's articles. The first was in issue of June 16, and the next in issue of July 7.

AT the outset let me state that after having secured a good queen for your bees, there is no other one point that is of as vital importance in the profitable management of bees as the matter of first-class worker comb. You can never hope for marked success when a large per cent of your frames is filled with drone comb. In the many hundreds of hives of bees that I am carefully inspecting I find a surprising amount of drone comb, and not infrequently is this the case in apiaries belonging to apiarists of some prominence. If you have drone comb equal to one frame in an eight-frame hive, you have thereby reduced your honey crop in that hive I think fully one-fourth. You have not only reduced your worker brood space, but these drones occupy space that is needed in the colony, and they have to be fed and cared for by the workers (the same as the aristocratic human drones in our 20th century civilization.) Remember that a worker bee hatches in 21 days from the time the egg is deposited in the cell, while the drone is thirty days in hatching.

The better plan is to put full sheets of foundation in your frames, but this is not generally available to the farmer bee-keeper, so I will speak of such methods as will give best results without foundation.

Comb Building and Comb Honey.

Always bear in mind that with a young, vigorous queen with a rather small colony of bees, you will get best results in comb building, because the queen is crowding the bees in depositing eggs as fast as comb is drawn. A heavy honey flow is not so favorable for building worker comb as is a medium or light flow. An old queen with a rather strong colony and a heavy honey flow, will often build more than one-half drone comb.

If no foundation is used or only narrow strips for starters, and your colony is medium or weak, have them build at one side of the hive in preference to building on the middle frames, every few days pressing the combs in place to make them build straight. Unless two or three frames are well filled with comb and brood, slide one over and drop an empty one between the straight combs that have the brood. Continue this method till all combs are built out. Never allow the bees to build the combs outside the brood nest as this gives you a larger per cent of drone comb.

Comb Honey.

We now come to the consideration of comb honey. The most popular plan is to use section supers holding twenty-four one-pound sections with thin division boards between the sections. These are for eight-frame hives. A narrow strip of foundation should be fastened in each section. This may be done in a number of ways. There are foundation fasteners on the market—bee supply houses—but a convenient home method is to cut your foundation in 2½ x 1½ inch strips. Prepare a polished piece of fine grained wood 1 x 2½ x 8 inches, dressing one end down for convenience in handling. The other end may be rounded slightly at both edges but left full width. This end must be carefully polished and smooth. Now to use, keep well soaked in water to prevent foundation sticking to it. Have your sections folded together, dampening at the grooves to prevent breaking. Then when perfectly dry and slightly warmed, and foundation warmed so as to be pliable. place a piece of foundation in such manner in the section, which is inverted, at bottom, that when firmly pressed with the rounded end of the wet "hand press" above described, you can press about one-fourth inch wide of the foundation firmly into the section. Then turn the remaining portion of the foundation up at right angles and invert the section, and your "starter" should be firmly fastened in its proper place.

Supers should be put on the hives before the bees get crowded below. A colony that is "honey bound" below will not work nearly so well in the sections. Bees will not so readily carry honey over sealed comb to store in sections above as if the brood is near top bar, thus placing sections near the brood.

Sometimes bees are very obstinate about going into the supers. I then open the brood chamber and select from a comb of brood a piece of brood in all stages of development, cut to closely fill one section. Put this section of brood in the center of your super. The bees come up to care for the unsealed brood, and as they cluster there, and as the young bees hatch, they put honey in the vacant cells, and not satisfied with that, they want more honey near that brood, and they commence to build comb and store honey.

Before this super is quite full place another super under it. Bees don't like an empty space in their hive; they take hold with renewed energy to fill this bottom super, at the same time finishing the top super.

I would advise the beginner, even if he has made his own hives, to procure supers and one-pound sections from a supply dealer, for then everything fits in its proper place, and is so constructed that you will get more perfectly built comb honey. If you have any surplus honey after supplying your own table, you should have it in such shape that you can sell it to best advantage.

Mr. D. G. Shultis, Secretary of the Los Angeles County Bee-keepers Club, informs us that the next meeting of the club will be held in the committee room of the Los Angeles Chamber of Commerce in the afternoon of September 3rd. Papers will be read by Mrs. H. G. Acklin of Glendora, J. W. Ferree of Newhall, and George B. De Sellem, Los Angeles County Bee Inspector.

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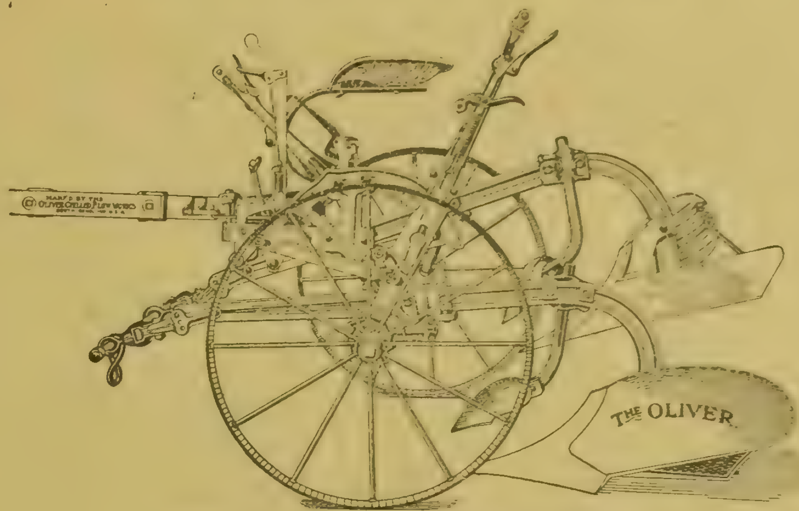

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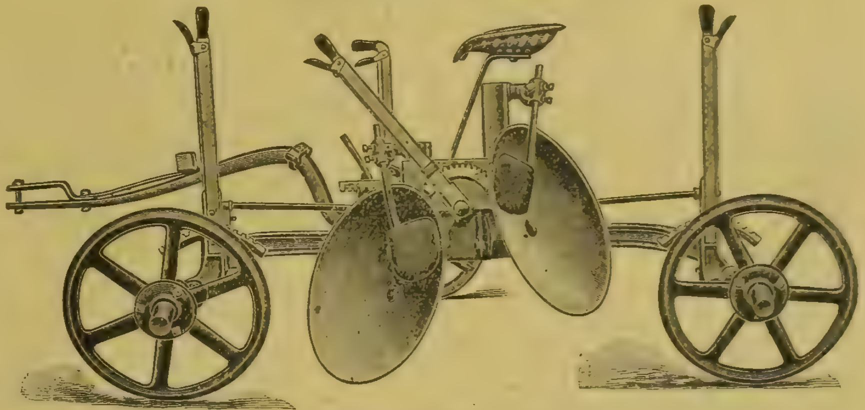
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Queries and Replies

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Spanish Stew.

Please give recipe for Spanish stew in which tomatoes and peppers are used principally.—M. E., Riverside.

We refer inquirer to household page of this issue on which are two recipes for so-called Spanish stew. Housekeepers who have favorite recipes for this dish are asked to send them in.

Orange Vinegar.

Please give method of making orange vinegar.—N. E., Riverside.

We are unable to give such recipe and ask subscribers who have had experience to send us method of procedure. In a general way we would say: Express the juice of the oranges, add a cupful of baker's yeast to each gallon of the liquid. Allow to set for a couple of weeks, then add good quality of old vinegar or of "mother" which has acetic acid ferment. In the course of time this would probably give a good grade of vinegar.

Watermelons for Hogs.

Are watermelons a balanced ration for hogs?—I have some which have had nothing else for three weeks and do not seem to care for alfalfa or evergreen corn when they get plenty of melons. Am told that chickens do not do well when fed melons?—M. D. W., Livingston.

The experiment of our inquirer seems to be succeeding. However, we would not regard the melon as a balanced ration. We do not think the feeding of melons to hens will affect their laying.

Drying Figs.

Please inform me regarding drying figs.—A New Farmer, Auburn.

See answer to similar query in this issue.

Pruning Blackberries.

I noted in recent Cultivator suggestions regarding caring for loganberries, and wish to ask if blackberries and red raspberries are treated in the same way. Mine were planted last winter. The blackberries have made good growth and bushes lie flat on the ground. Is it better to have frame for them, and should they be cut back now or should I wait until January. The raspberries are nearly all done bearing. Should the old canes be cut off? Should they be staked?—W. E. T., King City.

Because it is stated the blackberry vines lie flat on the ground, I suppose they are dewberries, and if so should be treated same as loganberries. A couple of wires stretched along on a frame that would support the wires 12 inches above the ground would make a satisfactory trellis.

This frame is often made by driving in a stake about every 10 or 12 feet in the row and nailing a cross piece to the top of the stake—one by four, redwood, will answer for stake, and one by three pine for the cross piece. The latter should be about 18 inches long, and the stake should be 12 inches above ground. The wires are stretched along on top of the cross piece near the end and can be fastened by staple or small nail driven partly in and bent over. Cut them back any time. Cut out the old wood from the red raspberries and it will be better for the plants to fix up some kind of support to steady them from the wind. Do not train the raspberries along on a trellis as they are not a vine, but should be allowed to grow in bush form. In the late fall prune them back to about 3½ feet.—Q. A. L.

Fig Curing.

How are figs cured for packing, and are they dipped?—M. H. S., Del Rey.

Pick from tree when fully ripe. Secure all of stem so as not to break the skin. Place on trays and tu once or twice during the process drying. Do not dry too hard. When cured but still pliable put in sweat boxes for several days. They may then be dipped in boiling salt water, or some prefer a very thin syrup boiling hot. After draining fruit should be at once packed.

Blistered in the Sun.

I have cow with large udder. She was overfed on green fodder and was affected with colic, and lay down in the sun until I made her get up and go into the shade, but not until the sun had burned the udder terribly. It seemed to make her sick so that she would eat but little; her udder was caked and feverish. She is now somewhat better and I am permitting the calf to take care of the quarter stil affected. Am bathing the udder hot water three times daily, following with soft salve. There is stil a blister as large as the palm of one's hand. Am I following the right course?—Subscriber, Sultana.

I see nothing more to recommend and think your treatment good. trust by this time the patient is well When she freshens next time watc her carefully and see that she milked clean and not allowed to li down in a damp place to sleep. is well if the cow is at all fat give her a dose of Epsom salts, on pound with a tablespoonful of groun ginger before she calves to lesse the danger of inflammation.—M. E.

Fly Repellants.

Please recommend mixture for pu pose of spraying horses and cows repellant of flies, or can you give mula for making same?—Subscribe Lancaster.

Stock food dealers who have adve tised in the Cultivator have called a tention to repellants which have gi en excellent satisfaction. That probably the simpler way of securi results, but if the inquirer wishes mix his own repellant, he can do by taking one pound of tobacco stem which steep for sometime so as make a strong "tea," say about thr gallons, and a little turpentine, or there are no sores on the animals little coal oil may be added, say ounce to a gallon. Wash stock wi this and lice and flies will have use for them for a short time. O writer in former Cultivator reco mended use of ordinary kerosene a spray. Use lightly so as not take the hair off. Another is: four quarts of coal oil add one qua of fish oil and a pint of good sto dip, shake well, then spray or wi on the hair of the cows.

Value of Manure from Cow.

We have in operation a fruit and dairy ranch. We have manure from 40 head of horses and cows to be distributed over the place. We wish to give the dairy proper credit for its manure and would like to ask what is a fair price for manure of a cow for one year; also for that of a horse.—H. A. S., Kerman.

The value of manure from any animal depends upon the feed, litter used for bedding, and care with which the liquid portion is saved. Estimates of the daily production of a dairy cow range from 70 to 108 pounds of the fresh fertilizer. Taking 75 pounds as a fair average, one may multiply by the 365 days in a year and then secure the worth of the annual output according to price in each section. For instance near any large city stable men hire the manure hauled away. In a rural section it has greater value, and usually in proportion to its distance from large producing sections. Probably the fruit grower in Fresno county can determine approximately the value of his cow manure and thus determine proper credit to give to his stock. The amounts produced by different live stock taken from Bailey's Cyclopedia of Agriculture are as follows: Excrement produced daily per thousand pounds live weight; sheep 34.1 pounds, calves 67.8 pounds, pigs 83.6 pounds, cows 74.1 pounds, horses 48.8 pounds, fowls 39.8 pounds. The above figures do not include bedding or absorbents and these may add almost as much of manurial value.

Mottle Leaf.

What is the cause of mottle leaf in oranges? My navels and Valencias seven years old have good care as to culture, water and fertilizer, have made strong growth this season and have fairly good crop. Trees which were not fertilized do not show mottle leaf.—Reader, Bloomington.

The question of mottle leaf is one of the most perplexing that has been discussed for years. We would call our subscriber's attention to articles which have appeared in recent Cultivators, written by Mr. Snowden. If he has used commercial fertilizers they may have affected the chemical composition of the soil to the extent that the condition of which Mr. Snowden writes may have been brought about. Again, the possibility of hardpan or a physical condition about the roots which is not healthful should be investigated.

Sweet Wine.

Please give formula for making sweet wine. What grapes are most suitable?—O. E., Ontario.

To answer such a question would be entirely beyond the limits of these columns for the manufacture of wine is a trade in itself. There are books published on the subject which would no doubt be helpful.

BEE-KEEPER'S GUIDE.

Prof. A. J. Cook's Manual of the Apiary which has long been considered a standard by every up-to-date bee man is still in print and meets with ready sale. California beemen should have a particular interest in it because of Prof. Cook's residence in this state and because of his interest in California honey production.

Regarding this book we note in a recent review by the American Bee Journal: "It is instructive, interesting, and both practical and scientific. On the anatomy and physiology of the bee it is more complete than any other standard American beebook. Also the part on honey-producing plants is exceptionally fine. Every bee-keeper should have it in his library."

It is a book of 544 pages, has 295 illustrations, is bound in cloth, and will be mailed by the Cultivator at the price of $1.20.

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In this department we will insert your advertisement under a classified head for 1½ cents per word per issue. No ad accepted for less than 25 cents. Our classified columns are the clearing house for our many thousand readers.

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For Sale—Second-hand windmills, tanks, engines and farm machinery that will do the same work as new at half price. Domestic and irrigating windmills and tanks. Twenty 2000-gal. tanks at $18.50 or $20, f. o. b., 2 H. P. Fairbanks, 3 H. P. Dempster, 4 H. P., 6 H. P. Fairbanks, 6 H. P. White & Middleton, 9 H. P. Moore, 10 H. P. Lambert, 20 H. P. Fairbanks, like new; 25 H. P. engine and mining hoist, 2 H. P. steam boiler and engine. Farm and light express wagons, surrey $35, baler, header; gang, disc, road, riding, and walking plows, weeder, cultivator, feed rack, wagons, tanks, mounted sawing outfit, fruit crusher, bone grinder, wheelbarrows, pipe, Fresno and Slip scrapers. Most anything a rancher wants second hand. Demmitt Co., upstairs, 120 N. Main St., Los Angeles, Cal.

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The Kruckeberg Press, 123 South Los Angeles St., Los Angeles, Cal., makes a specialty of Horticultural Printing and Engraving. Cuts and illustrations of all standard, economic and ornamental plants on hand and subject to the use of patrons without cost. Samples and estimates cheerfully furnished. Remember, we design, write, engrave, bind and print; in brief, do the "whole thing," at no additional expense to the customer. Correspondence a pleasure.

LAND FOR RENT.

For Lease—33 acres, all in bearing fruits. fully equipped. Two hours' ride from San Francisco. In Sonoma county. Address Mrs. M. H. Jenkins, Route 1, Box 40, Sonoma, Sonoma Co., Cal.

Poultry Show Dates

Sacramento, September 3-10, 1910. Annual Poultry Show held in connection with the State Fair. E. F. Mitchell, Director, Sacramento.

North Yakima, Washington, Sept. 26-Oct. 1, 1910. Washington State Fair. John W. Pace, Secretary, Harry H. Collier, Superintendent.

Stockton, Cal., Nov. 8-12, 1910. First Annual Exhibition of the San Joaquin County Poultry Association. Eugene P. Sabin, Secretary, Stockton.

Aakland, California, Nov. 22-27, 1910. Annual Exhibition of the Alameda County Poultry Association. E. K. Healey, Secretary, Alameda, Cal. tary.

Seattle, Wash., Dec. 5-10, 1910. F. E. Barth, Secretary.

Portland, Oregon, Dec. 5-10, 1910. J. C. Murray, Secretary; M. W. Coates and Harry H. Collier, Judges.

Petaluma, Cal., Dec. 8-11, 1910. Fourth Annual Poultry Show of the Petaluma Poultry Association. H. R. Campbell, Secretary, Petaluma.

Ashcroft, B. C., Dec. 23-31, 1910. W. Maxwell, Secretary; H. H. Collier, Judge.

Tacoma, Wash, January 3-11, 1911. Frank L. White, Secretary, South Tacoma; Miller Purvis, Judge.

San Diego, Jan. 4-5-6-7, 1911. San Diego Pigeon and Pet Stock Club. A P. A. rules. W. C. McDougal, Secre-

Los Angeles, Cal., Jan. 5-11, 1911. Annual of The Poultry Breeders Association of Southern California at Chutes Park. A. H. Memler, Secretary, San Gabriel.

Colfax, Wash., Jan. 10-14, 1911. H. Rosenkranz, Secretary. H. H. Collier, Judge.

Walla Walla, Wash., Jan. 17-21, 1911 H. Dickinson, Secretary; H. H. Collier, Judge.

Jerome, Idaho, January 24-28, 1911. Wm. N. Hardwick, Secretary.

The premium list of the eighth annual fair at Wilbur, Washington, to be held September 27-30 shows a big string of premiums for draft and thoroughbred horses.

FARM LANDS FOR SALE.

For Sale—815 acres in San Luis Obispo County. A typical dairy ranch. Plenty of wood, water, irrigable land, buildings, fenced and cross fenced. Orchards, vineyards, oranges, lemons and walnuts do exceedingly well here. Forty acres of land suitable for these. Price $21 per acre. For further particulars apply to Mrs. F. A. Clink, Pozo, Cal.

2285 Acres Choice, Deep, Sandy Loam—Ideal for subdivision or eucalyptus growing. Can be cultivated any day in the year. Southern Pacific Railroad runs through the ranch. Also close to deep water for shipping. Free from wind and frost. Now all planted to grain. Price $100,000.00 for limited time. Geo. W. Sill & Co., Watsonville, Cal.

Apple Orchards—Large and small, in the only apple producing section in California. The greatest section west of Missouri River. Write for booklet. Geo. W. Sill & Co., Watsonville, Cal.

Fruits, Flowers, Sunshine, Progress—All these invite investigating beautiful Hemet Valley, Southern California. Booklet free. William Kingham, Hemet, Riverside County, Cal.

For Sale—El Cajon Grant Land. In the heart of El Cajon Valley, 30 acres of choice vineyard, large house, cottage and barn; trays, boxes, etc. Close to proposed electric line. S. B. Hawley, 1548 D St., San Diego, Cal.

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For Sale—Forty acres improved land near Corcoran, Cal. Good for alfalfa or beets. J. W. Fairchild, 1090 E. 6th St., Pomona, Cal.

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For Sale—12 miles from Los Angeles, in finest agricultural section. 74 acres of wonderfully productive sandy loam soil, mostly in alfalfa. Will grow abundant crops of most any kind of fruit. Has one of the finest wells in district, 140 inches water, brand-new plant. 800 feet irrigation pipe, 10-ton wagon scale, $1000.00 worth of oat hay in barn. Five-room house. This will bear your strictest examination and can be had way under value as owner is leaving country. Price $30,000. Parrish Barker, 207 Union Trust Bldg., Los Angeles, Cal.

A Bargain—If taken soon. 40 acres good bean, corn, grain or garden land, well equipped for poultry. Five-room house with bath and pantry. Furniture, farming implements, three incubators, six brooders and houses, 20 colony houses, 2200 chickens. Ranch fenced with wire netting 4000 feet. Water and gas pipe, gas engine and feed grinders, natural gas for all purposes. 12 miles from beach, three miles from two good towns, 1½ miles from school. Young orchard and berries, no irrigation needed. Good well water and plenty of it. All for $5000; $2000 cash, easy terms. Address, Owner, Thos. B. Wylie, Box 291, Home Telephone No. 1346, Santa Maria, Cal.

The Best Buys in farm lands in Central California can be had through us. Call or write Sterling Securities Co., Savings & Loan Bldg., Stockton, Cal.

Beaumont, California—For Sale—A young five-acre pear orchard; one of the best in Beaumont; $350 per acre. Box 266, Beaumont, California.

For Sale—A 20-acre farm for $20 cash and $20 a month; possession now; $90 to $125 per acre; your crops pay for the land. Rich, level land for alfalfa, oranges, almonds, grapes, cows, chickens; abundance of ditch water, for irrigation, for $1 an acre a year. Where else can you get this? In Oakdale Colony, near good town and railroad station, climate delightful. T. Wiesendanger, 207 S. Broadway, Los Angeles, Cal.

Southern California—For Sale—280 acres light land, very fertile, no alkali, good water right, 14 miles from Fresno, Cal., one mile from railroad, in heart of fine dairying and fruit raising district. Land suitable for Thompson's or Malaga grapes, peaches or alfalfa; alfalfa ½ mile away has made five crops and had no water; subirrigates. Place is all under cultivation and all summer fallowed. Good seven-room house and two barns on ranch. Address Geo. H. Hudson, Conejo, Fresno Co., Cal.

For Sale—20 or 40 acres foothill land, fine soil for apples or pears. Some fine trees in fine bearing, without irrigation. 25 miles from Los Angeles, 1 mile from railroad. $150 per acre. Graham Smith, San Fernando, Cal.

TREES.

Fine Large Eureka Lemon and Valencia Orange trees, fine for replanting. Choice lot of fine Washington Navels. Order quickly. They are going. Home 'phone 1731. John R. King, Whittier, Cal.

Surplus Stock—Monterey Pines, 10 feet, 85c. Camphor trees, 3 feet, 28c. Black Acacias, 8 feet, 35c. Arbor Vitae, for boundary line planting, 15c. Canary Pines, 2½-3 feet, 45c; 8 feet, $1.50. Ballou's Nursery, Pasadena, Cal.

Marsh Seedless Grapefruit—600 large trees for sale. E. S. Thacher, Nordhoff, Cal.

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Wanted—[illegible], Cal.

Wanted—[illegible] learn real estate, advertising [illegible] home locality, and represent us; no canvassing; good prospects for good men; all kinds of property listed free; send yours. Mutual Realty Co., 1829 "F," 150 Nassau Street, New York.

Wanted—Experienced man to bud about 15,000 nursery stock, peach to apricot, Imperial Valley. Address C. A. Myer, 205 Grant Bldg., Los Angeles, Cal

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Registered Shorthorn Bulls and Poland China Hogs for sale. Best breeding. P. H. Murphy, Perkins, Cal.

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Milk Coolers, Bottles, Caps, brushes, Buhl milk cans, Sharples separators, Babcock testers, veterinary instruments, wood soled boots and shoes, and our celebrated "Prosperity" washing powder. Guy F. Kelsey, 108 E. 8th St., Los Angeles, Cal.

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Wild Plant Improvement Gardens, Santa Ana, California. Newton B. Pierce, proprietor. Rare choice ornamentals and new fruits from all lands.

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California Black Walnut Seed from finest, thriftiest trees in the state. Write for prices on any quantity from 5 lbs. to a ton. M. J. Crow, Gilroy, Cal.

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White Orpingtons—Cook Strain. We offer for sale a limited number of trios and pens of utility and exhibition stock at bargain prices for the summer season. Our breeding pens are imported direct from Wm. Cook & Sons, Scotch Plains, N. J., and are sons and daughters of first and second prize winners, Madison Square Garden. Messrs. Cook & Sons say of them: "They are all from some of the finest birds in this country." Book orders now for next season's hatching. Eggs $5.00 per 15. $25.00 per 100. Day-old chicks 50c each. October delivery. Rancho La Solana, Box 143, Chula Vista, Cal.

How to Make Money—Mrs. A. Basley's New Poultry Book is just out. It is without exception the most wonderfully complete manual on the subject of successful poultry management ever written. The secret of how to raise every turkey hatched and the "Basley Formulas," now published for the first time, are worth many times the price of the book. The "Western Poultry Book" is a practical book by a practical woman. Price $1.00. Address Mrs. A. Basley, Box 77, Venice, Cal.

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Greatest Egg Producers

Pedigreed, trapnested, scientifically bred. Free circular. DAVID J. LOVELL, 5720 So. Park Ave., Los Angeles, Cal.

Lodi Hatchery—Just hatched, chicks from healthy, heavy laying stock. Booking orders for later delivery. T. C. Hawley, 504 E. Elm St., Lodi, Cal.

For Sale—Eggs for hatching, from thoroughbred Mammoth Pekin and Indian Runner ducks, 75c per 12, $5.00 per 100. A. E. Nelson, El Monte, Cal.

They Lay and Win—Rose Comb Black Minorcas. Eleanore Minorca Farm, Route 1, Los Angeles, Cal. Stock for sale.

Single Comb Brown Leghorn Eggs—$5.00 per hundred, $1.50 single setting. Mrs. E. Foran, Box 445, Visalia, Cal.

S. C. Black Minorcas—Choice hatching eggs and stock for sale. S. D. Bickford, Gardena, Cal.

Poultry Wanted—We pay the highest market price for all the local poultry we can get, no matter how large the quantity; also fresh ranch eggs. We remit immediately. Allaway & Layton Co., 607 E. 3d St., Los Angeles, Cal.

For Sale—Eight Hens and Cock, Rose Comb Black Minorcas (Northrup Strain). Seven hens and cock, White Minorcas. All pure bred, fine stock. Also pullets and cockerels, and Rhode Island Reds. C. U. Chamberlin, Gem City Yards, Los Gatos, Cal.

Bonnell's S. C. Black Minorcas win every time, the best that can be secured at any price. Eggs reduced to $1.50 per setting. A few cockerels for sale. C. C. Bonnell, State Vice-President American Black Minorca Club, 2919 Brighton Ave., Los Angeles.

MISCELLANEOUS.

For Sale or Exchange—A No. 1 Twenty Century Carbide Gas Plant, 35 burners strong; with two-burner hot plate. Some globes and burners. Cost $100.00, in perfect order. $50.00 cash or would exchange for Bartlett & Kiefer pears and cherries, if No. 1 stock. Address H. L. Bauer & Sons, 737 Spring St., Los Angeles, Cal.

For Sale—Registered Holstein Bulls; 1 to 2 years old. Some sired by Prince Juliana, brother of former world's record heifer, Juliana De Kol. Dam and granddam, A. R. O. cows. Three record-breakers in some of their pedigrees. M. E. Sherman, Minnewawa Vineyard, Fresno, Calif.

Carneaux Pigeons—Guaranteed thoroughbred; original stock purchased from Plymouth Rock Squab Co., Boston. Four weeks squabs, weight twelve to twenty ounces. Breed ten times a year. Guaranteed mated and working when sold. Write for particulars. W. C. Barrett, Carneaux Squab Co., San Pedro, Cal.

Psidium Aromaticum—Best Guava ever introduced. Extra vigorous grower; fruits globular, 2½ inch diameter; skin and pulp rose color; highly perfumed and aromatic; none better for jelly in Southern California. Strong, 3½-inch pots, 50 cents each, $5 per dozen. For sale only by the Montarioso Nursery, Santa Barbara, Cal.

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Household Department

DAILY GREETING.

Pace through thy cell, old Socrates,
  Cheerily to and fro;
Trust to the impulse of thy soul,
  And let the poison flow.
They may shatter to earth the lamp of clay
  That holds a light divine,
But they cannot quench the fire of thought
  By any such deadly wine.
They cannot blot thy spoken words
  From the memory of man
By all the poison ever was brew'd
  Since time its course began.
Today abhorred, tomorrow adored,
  So round and round we run;
And ever the truth comes uppermost,
  And ever is justice done.—Selected.

AN INDIGNANT DEPOSITOR.

A LEAN, grizzled man shouldered his way through the anxious crowd gathered in knots in the Madison bank, and without knocking strode into the president's private office.

"Are you the president of the bank?" he asked a dapper little man seated before a large roller-top desk.

Mr. Amherst stared superciliously over the rim of his glasses. "I am," he said with icy deliberation.

The lean man picked up a chair and set it down with a thump at the side of the desk. "Well, I want 'er talk to you."

"I'm sorry, but I'm too busy"—began Mr. Amherst.

The lean man hit the desk a blow that jarred several pens from a holder. "Your business will have to wait," he said. "You're goin' to listen."

Mr. Amherst glanced nervously toward the door, but the stranger cut off that means of escape. "Well, of course, sir, if—"

"Just listen; I'll do the talkin,," said the lean man. "I lived on a farm, Mr. Amherst, until I was 20 years old. During them years I did more work than you and your ancestors have done in a century, but I determined I'd get away from the farm, and I saved every cent I could get with that idea in view.

"One day, after ten years' savin', I found I had $100. Think of it, ten years to save $100. Well, I came here and got a job in a small grocery store, I knew how to work and save, and in five years I bought that store. When it was mine I worked harder than ever; I wanted to buy a bigger store in town.

"In another five years I had $3,000, just the amount I had set my heart on. Then the bank I had my money in broke. I didn't get a cent.

"That hit mighty hard, but I kept my spunk up and started all over again. I was 30 years old then; I'm 40 now, and I've saved $3,000 again during the last ten years.

"That $3,000 is in this bank, Mr. Amherst, and I've come for it. I want my money."

Mr. Amherst took off his glasses with trembling fingers, and wiped them on a fine cambric handkerchief. "I assure you, my dear sir, that you will get every cent of your money. Just now, owing to some complications, we are not honoring checks, but the bank is as solid as Gibraltar."

"That's what they told me before," the lean man said slowly. "But I don't want promises. What I want is my money."

Mr. Amherst looked longingly toward the door. "But, of course, my dear sir, you can't be preferred to the other depositors," he faltered.

The lean man rose abruptly to his feet and kicked back his chair. "I've said all I've got to say; now I want my money. Now, do you understand —now!"

The lean man was glaring down fiercely. One of his hands rested on the desk, and opened and closed convulsively. Mr. Amherst noticed that it was brown and knotty, and seemed to have a powerful grip.

"I'll—I'll call the cashier and you can talk it over with him," Mr. Amherst stammered.

"You'll do nothing of the kind. You'll get me that money yourself—three thousand dollars—or there'll be one less grafter in this world in a few minutes."

Mr. Amherst's cheeks blanched and he ran his fingers trembling along the corners of his mouth. The lean man suddenly took a step backward and thrust his right hand into a hip pocket.

"I'll get the money," Mr. Amherst exclaimed.

Through a passageway reached by an inner door of the office Mr. Amherst made his way to the vault, the lean man at his elbow. A few minutes later they were back in the office, and one of the lean man's pockets were bulging. Picking up a piece of paper, he scribbled a few words on it and handed it to Mr. Amherst. "My receipt."

It read: "Received from John Amherst $3,000, sum of my deposits.—John Wilson."

At the door, he paused and looked back with a smile. "Take my advice and be honest hereafter in your banking business," he said.

A moment later the door swung open again and Mr. Amherst, pale and nervous, came out and threaded his way to the receiving teller's cage.

"How much has John Wilson got deposited here?" he asked.

"John Wilson?" the teller's expression became vacant. "I never heard of him."—Universal Magazine.

ABOUT CALLS.

There are many women who are puzzled as to the length of time that should elapse between calls. A first call should be returned within two weeks, but after that formality there is no specified time. Within two or three months, at one's convenience, is correct, but if calls are not exchanged at least once a year, the acquaintance is said to be dropped. The older residents of a neighborhood are expected to call on those lately moved into it, as the newcomer can not and does not know even the names of her new neighbors. She should return such calls within two weeks, leaving a card of hers and her husband's for each woman in the family and one of her husband's for each of the men of the family. Then, if the acquaintance is not found agreeable, neither side calls again.—Portland Oregonian.

AND SO THEY WERE MARRIED

A-spinning sat Priscilla fair;
John Alden came to woo her there.
So she put down the spinning wheel
While he put up a winning spiel.
—Kansas City Times

SPANISH DISHES.

An inquirer wishes recipes for a Spanish stew also other Spanish dishes. We start with four this week from the Times Cook Book. Have any subscribers favorite dishes which they will send in?

Beefsteak Spanish.

Lay a slice of upper round steak, about two pounds, rather more than two inches thick, on a pie plate, leaving on the rim of suet. Add a small teacup of water and baste every ten minutes for thirty minutes, baking in a moderate oven; remove from oven, sprinkle with a saltspoon of salt and half a saltspoon of pepper, and cover with a layer of sliced onions: bake fifteen minutes longer; sprinkle with a saltspoon of salt, then cover with a layer of chopped tomatoes (the solid meats of a can of tomatoes will answer). Bake again fifteen minutes, sprinkle over it two tablespoons of grated cheese and place in oven long enough for cheese to melt nicely. There will be a thick rich gravy on it, deliciously flavored with the onions and tomatoes. The steak will be very tender.

Spanish Stew.

Melt two tablespoons butter, slice two small onions and mix with a bowl of meat cut into pieces, brown all together. Then add one teaspoon flour, four or five tomatoes, two carrots cut lengthwise, two tablespoons of Worcestershire, one tablespoon of chili sauce, one seeded red pepper cut fine, one tablespoon salt and two or three cups of stock, and let simmer slowly until thick and done. Serve on platter and garnish with twelve large red peppers which are stuffed with the following: one cup tomatoes, two crumbled crackers, one level teaspoonful of salt and sugar, one lump of butter mixed. Fill peppers and bake slowly for twenty minutes.

Spanish Stew.

Take two pounds of round steak or lean stew meat cut in inch pieces and stew until very tender in small amount of water. While the meat is cooking, clean a dozen large ripe chili peppers by removing seeds and all the veins, excepting about seven or eight veins in all, (the veins are the hot part), then cover and let come to a boil; remove from the fire and when cool enough to handle, scrape with a knife the soft red chili, leaving this skin to throw away. Then fry 3 medium sized onions in suet; add two small tomatoes and the chili you have just removed from the skins; add a little water, half a teaspoon of sugar, and salt to taste; let cook until very soft, then rub through a strainer; add to the cooked meat and let all come to a boil; thicken with a very little flour rubbed smooth with milk. If the tomatoes are not tart, add a teaspoon of vinegar.

Beef Tamales.

Boil one pound of beef and pour over it some hot beef fat. Scald thoroughly one quart of meal, adding one teaspoon of salt and a tablespoon of lard. Cut off the upper end of corn shucks and put to boil in cold water; let scalded meal and shucks cool off; chop the beef fine and season to taste with the salt and chili powder. Put a thin layer of meal on shucks (leaving shucks enough to turn ends and sides under); then put a small quantity of meat in center. Put a few shucks in bottom of a pot to prevent scorching and pack in the tamales, placing a weight on top. Cover with boiling water, adding one tablespoon each of lard and chili powder.

VARIOUS USES OF BORAX.

No one known article within our reach possesses the virtues of borax for general use in the household. As an antiseptic and disinfectant it stands preeminent.

As a washing powder it is excellent. For the dining room and kitchen it is equally effective.

Added to dishwater it brightens the china and glassware and cleans the silver.

Coffee pots and tea pots in which borax water is boiled two or three times a week are purified and entirely freed from musty taste or odor.

As a simple household remedy for the many ailments of the family borax is unrivaled.

If the eyes are weak or inflamed a daily washing with a solution of borax will strengthen and cure them.

For sore throats a small quantity of powdered borax dissolved in the mouth and swallowed is very effective.

A cold in the head may be relieved by snuffing powdered borax.

The bites of insects, as well as summer rashes, will cease to give pain if bathed in borax water.

A TWENTY CENTURY OLD EXAMPLE.

"We will never bring disgrace to this our city by any act of dishonesty or cowardice, nor ever desert our suffering comrades in the ranks; we will fight for the ideals and sacred things of the city, both alone and with many; we will revere and obey the city's laws, and do our best to incite a like respect and reverence in those above us who are prone to annul and set them at naught; we will strive unceasingly to quicken the public's sense of civic duty; that thus, in all these ways, we will transmit this city not only not less, but greater, better, and more beautiful than it was transmitted to us."

This is the oath which the young men of Athens took upon assuming the duties of citizenship. As the editor of The World's Work says in the August number: "Certainly it is as pertinent on the lips of a young American today as on those of a young man in the city by the Acropolis twenty centuries ago. Only it must be remembered that to the ancient Greek the 'city' meant also the nation."

PROOF.

"Do you believe, Doctor, that man is made of dust?" asked the student.

"I don't know about man," returned the professor, "but I am sure girls are—they make such a dickens of a lot of trouble when they get in a fellow's eye."—Harper's Weekly.

The everyday cares and duties, which men call drudgery, are the weights and counterpoises of the clock of time, giving its pendulum a true vibration, and its hands a regular motion.—Henry W. Longfellow.

You've got to put your see'ers on,
An' go an' hunt it up."
—Anon.

The boy smokes cigarettes behind the barn because dad smokes cigars in the open.

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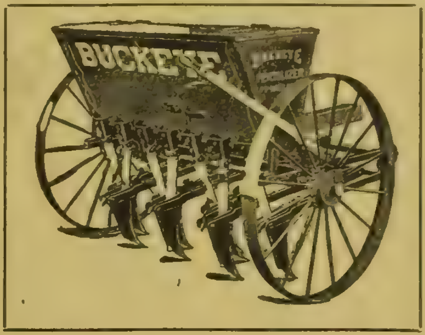
For Sowing Vetch and Peas



We have sold a great many carloads of these drills in Southern California and the Buckeye is now recognized by orange growers and fertilizer men as the best drill made for handling commercial fertilizer. Its low wheels, proper sized box, and large feed openings giving great capacity when desired, make it especially adapted to orchard use. This drill also made to successfully handle tankage.

Hawley, King & Co.
224-228 South Los Angeles St.
LOS ANGELES, CAL.
WAGONS, CARRIAGES, HARNESS, FARM IMPLEMENTS OF ALL KINDS,
AUTOMOBILES, POWER WAGONS

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________________1910

CULTIVATOR PUBLISHING CO.,
115½ No. Broadway, Los Angeles, Cal.

Gentlemen—Enclosed find $_______for which please send the **Cultivator** for one year to the following, or credit on my account

from ______________ 19 to ______________19

NAME	P. O. ADDRESS	STATE

SIGNED____________________

ADDRESS ____________________

San Francisco and Los Angeles Produce Markets

Los Angeles Markets

LOS ANGELES, Aug. 24, 1910.

Butter.

Large receipts for past four days has caused a weakness in the butter market and on Tuesday a decline of one cent from last week's quotations was made. Receipts on that day aggregated 39,256 pounds.

Price to trade 2½c in advance of the following Produce Exchange quotations:

Extras	33½
Firsts	31
Cooking	23½

Cheese.

Northern fresh	17@17½
Anchor, large	18
Oregon Daisy	18½
Imported Swiss	28@30
Domestic Swiss	22@24

Eggs and Poultry.

Eggs stand at same quotations as last week. The prime factor in the market remaining stationary is the large receipts of Easterns.

Paying price f. o. b. L. A. is:

Local ranch candled	37
Case count buying price	33
Eastern fresh	30
Eastern storage	27

Dealers pay for live poultry f. o. b. L. A.:

Hens, per lb	15@17
Roosters	9
Broilers	16@17
Turkeys	22@24
Geese	12
Ducks	14¼
Squabs, per doz	1.50

Live Stock.

The following quotations are f. o. b. Los Angeles, on all stock:

Hogs, 175 to 200 lbs	9
Prime Steers	5
Heifers	4@4½
Calves, per lb	5¼
Sheep ewes, per head, shorn	4.00@4.50
Lambs, per head	3.50
Wethers, shorn	4.00@4.50

Potatoes.

Wholesale prices are:

Local Burbanks, ctl	1.50
Highlands	1.40@1.50
Sweets, Yellow, per lb	2¼@2½

Onions.

Wholesale quotations:

Yellow Danvers	1.60@1.75
Silver Skin, per ctl	3.00
Garlic	7

Vegetables.

Wholesale quotations:

Asparagus	16
Artichokes, northern, doz	85@1.00
Beets, sack	90
Beans, green	4@5
Beans, Limas	4½
Brussels Sprouts	10
Bell Peppers, lugs	50
Green Chilis	4
Cabbage, per sack	1.50
Cucumbers, per box	40@50
Celery, crate	3.00
Cauliflower, per doz	1.25@1.35
Carrots, per sack	90
Egg Plant per lb	6
Endive, doz	40
Green Corn, box	35@50
Green Onions, per doz. bunches	20@25
Lettuce, choice, per crate	1.00
Leeks, per doz	35
Okra, lb	6
Peas, per lb	6½
Pumpkins, lb	1@1½
Parsley, per doz. bunches	25
Parsnips, doz. bunches	15@20
Radishes, per dozen bunches	10@15
Rhubarb, strawberry, per box	1.25
Rhubarb, crimson winter	75
Spearmint, doz. bunches	30@35
Spinach, per dozen	15
Summer Squash	40
Turnips, sack	90
Water Cress, doz. bunches	25@35
Tomatoes, box	40@50

Citrus Fruits.

Valencias	4.00
Grapefruit	2.25@3.50
Lemons	4.50@5.00

Fresh Fruits.

Wholesale prices on the market are:

Alligator Pears	4.00
Apples, W. Astrachan	1.50@1.60
Apples, Bellflowers	1.35
Gravensteins	1.10@1.50
Alexander, lug	1.10@1.40
Crabapples, box	1.75
Casabas	1.75
Cantaloupes, crate	2.75
Figs, box	75@1.00
Grapes, lug	1.00@1.50
Pears, box	85
Bartletts	1.75
Strawberries	6@7
Raspberries	7
Blackberries	7
Nectarines	1.00@1.50
Peaches, box	1.25
Plums, box	1.25
Prunes, box	1.25
Quinces, lug	1.00
Watermelons, lb	¾@1

Dried Fruits.

Wholesale prices are:

Apricots	12½
Evap. apples, fy, per lb	8½
Peaches	6@7
Pears	9
Nectarines	8@10
Prunes	4@11
Plums	7@8

Beans Dried.

Wholesale quotations:

Black eyes	6.00
Pink, No. 1	7.25
Lady Washington	4.50
Small white	4.75
Garvanzas	4.50
Lentils	6.00

Nuts.

Wholesale quotations are:

No. 1 soft shell walnuts	15@16
No. 2 soft shell	10
Walnuts, budded	16
Almonds, IXL, per lb	17½
Pecans, polished	15@18
Peanuts, Eastern	7½
Peanuts, Eastern	7@7½

Honey.

Wholesale quotations:

Extracted water white	9
Extracted light amber	7½
Comb W. W.	18
Light amber	14
Beeswax	30

Hay.

Buying prices f. o. b. cars L. A. are:

Barley hay	8.50@11.00
Alfalfa	9.00@10.00
Wheat hay	10.00@12.00
Tame oat	11.00@13.00

Grain.

Wholesale selling price f. o. b. Los Angeles:

Wheat, new, per ctl	1.90@1.95
Corn	1.80
Popcorn, ctl	3.00@3.45
Egyptian corn	1.85
White oats	1.90
Seed Rye	2.10
Seed Barley	1.30

Feed Stuff

Wholesale selling price f. o. b., Los Angeles:

Cracked Corn	1.85
Cracked Wheat	2.05
Shorts	1.80
Bran	1.55
Oil cake meal	2.50
Feed Meal	1.90
Rolled Barley	1.25

San Francisco Markets

SAN FRANCISCO, Aug. 23, 1910.

Butter.

Notwithstanding light receipts, butter dropped a half point on extras Monday. Lower grades remain as last week.

The official quotations of the San Francisco Wholesale Dairy Produce Exchange for today are as follows:

California extras, per lb	31
California firsts	30½
California seconds	28

Cheese.

California flats, new	12½@16
Cal. Young Amer. fy. new	16½@18

Eggs and Poultry.

Eggs are in good demand, though a slight decline is noted for Monday which leaves extras a half cent lower than last week.

Official quotations of the S. F. Wholesale Dairy & Produce Ex. are:

Fresh ranch extras	35½
Firsts	32
Seconds	23
Thirds	20
Hens, per doz	4.50@10.00
Roosters, per doz	4.50@8.50
Fryers, per doz	4.50@5.50
Broilers	2.50@3.25
Geese	1.75@2.00
Ducks	4.50@7.00
Pigeons	1.50@2.25
Squabs	2.25@2.50

Live Stock.

San Francisco prices gross weight:

Steers	3¾@5¼
Cows and heifers	2¾@4¼
Hogs	6@9½
Calves per lb	4½@6
Milk Lambs, unshorn	6@6¼
Wethers No. 1	4½@4¾
Ewes No. 1	4@4¼

Potatoes.

Wholesale market quotations:

River White, new, box	85@1.00
Salinas Burbanks	1.15@1.30
Merced Sweets, lb	2½@3

Vegetables.

Wholesale quotations:

Artichokes	35@40
Beans, string, per lb	3@4
Beans, Limas, lb	4@5
Cucumbers, box	25@40
Celery, per crate	90@1.50
Chili Peppers, per box	35@40
Bell Peppers	6@7
Green Corn, sk	1.25@1.75
Egg Plant, per box	40@50
Lettuce, per crate	4.50@5.00
Okra, box	40@50
Peas, per lb	4@6
Rhubarb, box	50@75
Summer Squash, box 25 lbs	25@40
Tomatoes	60@1.00
Garlic	3@4

Onions.

Onions, sk.	80@90

Citrus Fruits.

Valencias	2.50@4.50
Grapefruit	1.50@3 50
Lemons	2.50@5.50
Limes	6.00@6.50

Fresh Fruits.

Apples, box	50@90
Apples, Gravensteins	1.00@1.10
Crabapples	50@1.00
Muskmelons	2.00@2.50
Nutmegs	50@1.00
Figs, box single	40@50
Grapes, seedless	40@50
Grapes, Muscat	75@85
Grapes, Tokays	60@75
Huckleberries, lb.	8@12½
Pears, large box	75@1.25
Bartletts, wrapped	1.00@1.25
Bartletts, ton	40.00@45.00
Peaches, box	40@60
Nectarines, red	40@90
Quinces, box	60@90
Plums and Prunes, crate	60@85
Blackberries, chst.	5.00@6.00
Raspberries, chst.	$15.00@20.00
Strawberries, chst.	5.00@7.00
Logans, chest	6.00@8.00
Pineapples, doz.	2.50@3.00
Watermelons, per doz.	1.00@2.00

Dried Fruits.

Santa Clara prunes	3¼@3½
1 cent premium for larger sizes.	
Apricots per lb. Royal	9@12
Apples, evap.	7½@7¾
Peaches	5@5¼
Walnuts, hard shell	13
Pears	8½@12
Figs	3¾@5
Nectarines	5@6
Plums	7@8

Futures on 1910—Apricots, 10¾@12; Moorparks, 12@13; Peaches, 5@6½; Prunes, Santa Claras, 4½@4¾; ½ cent premium. Figs, 3@5¼.

RAISINS—1909 crop, f. o. b.; fancy seeded, 16-oz. cartons, 5@5¼c; do, 12-oz., 4½c; do, choice, 16-oz., 4½@4¾c; choice. 12-oz., 4c; 50-lb. boxes loose Muscatels, standard, 4-crown, 4@4½c; 3-crown, 3¼@3½c; 2-crown, 2½@3c; seedless Thompson, unbleached, 3c; do, bleached, 5@6c; Sultanas, unbleached, 2¼c; do, bleached, 4@4½c; Muscatels, unbleached, 2¼c; London layers, clusters, 2-crown, 85@90c; 3-crown 90c@$1; 4-crown, $1.30@1.50; 5-crown, $1.75@2; 6-crown, $2@2.50.

Nuts.

Walnuts, S. S. No. 1	13½
Walnuts, hard shell	13
Almonds, '09, N. P. U.	13½@14
Almonds, '09 Nonp	15@15½
Almonds, I X L.	14@14½
Pecans	14@15
Chestnuts	14@15

Beans Dried.

Limas	4.45@4.50
Pink	6.00@6.20
Black eyes	5.60@5.75
Small white	3.90@4.00
Large white	3.80@3.90
Kidneys	6.75@7.00
Garvanzas	3.25
Bayo	5.85@6.00
Horse beans	1.75
Red Mexicans	6.00@6.10
Cranberry	4.50@4.75

Hops

Hops, 1909 crop	10@15
Hops, 1908 crop	8@10

1910 contracts now being made at 12 @14 cents.

Honey.

White comb	14@15
Amber	10@12
Extracted W W	7½
Extracted light amber	6½@7
Beeswax, per lb	24@30

Hay.

Arrivals of hay for the week have totaled the immense amount of 7200 tons, which is about 2000 tons more than we received the previous week.

An occasional offering of fancy hay readily commands our topmost quotation, but there is so little of such quality available that it cuts only a trifling figure in the market. The bulk of hay that is arriving is selling here at from $8.00 to $10.00 per ton, and the quantity arriving is so great that it is under the utmost difficulties that same has been placed.

There has been some hay shipped along the Coast right along, but not in large quantities, and foreign shipments have been very moderate.

Alfalfa hay continues decidedly firm at the advanced figures and quantities of this article have bten bought and a number of shipments this week directed toward the North. Alfalfa hay, at this time, is located on an entirely dieffrent basis from hay of any other variety, on account of the extraordinary demand in the North, which developed suddenly, and the fact that the large dairying interests had not prepared for their winter stocks.

Fancy wheat	12.50@13.00
No. 1 wheat or wh and o.	10.00@11.50
No. 2 wheat or wh and o.	8.50@10.00
Choice tame oat	11.00@12.00
Other tame oat	8.00@10.00
Wild oat	7.00@9.50
Stock hay	5.00@6.00
Alfalfa	9.00@12.00
Straw	40@50

Grain.

Wheat No. 1	1.60@1.65
Barley, good to choice	97½@1.00
Barley, poor to fair	92½@95
Oats, white	1..60@1.65
Rye, new crop	1.65@1.70
Corn, large yellow	1.55@1.60
Alfalfa seed	14@15
Mustard brown	4½
Millet	2¾
Flaxseed	5@5½
Broom corn seed, per ton	23.50

Feed Stuff.

Bran, per ton	23.50@25.00
Feed cornmeal, per ton	34.00@35.00
Cracked corn	34.00@35.00
Ground barley, per ton	23.00@24.00
Rolled oats, per ton	28.00@29.00
Middlings	32.00@34.00
Oil cake, per ton	40.00@41.50
Cocoanut cake per ton	25.00
Mixed feed, per ton	24.00@30.00
Shorts	24.00@26.00

Deciduous Market

SACRAMENTO, Cal., Aug. 20, 1910.

The following circular of the California Fruit Distributors gives number of cars of deciduous fruit shipped from all points in California for the week (7 days) ending Friday morning, August 19, 1910:

Peaches.

Two hundred and one cars: Salways have made their appearance and a few cars have gone forward. There will not be a great many to offer this coming week, but after that the supply will be ample.

Plums.

Fifty-seven and one-half cars. There has been no particular change in the plum situation since our last report. Shipments will continue to decline.

Pears.

One hundred and eighty-two and one-fourth cars. As predicted one week ago, the pear shipment is considerably smaller than for some time past. There will be a further decline during the coming week. Some winter pears are moving out, but the crop is very light and shipments will be limited.

Grapes.

Two hundred and sixty-four and three-fourths cars. There is no particular change in the situation on grapes since last week. It is expected, however, from this time on, that shipments of Malagas will decline and shipment of Tokays increase. There are but few Thompson Seedless moving forward now. Black Prince are going forward from the Lodi section and are reported to be of good color and proper ripeness.

Weather conditions continue very favorable and all crops are maturing nicely.

ALMOND SALES.

As soon as we quoted out prices one week ago our "friends, the enemy," began at once to underbid us, but some of the "trade" recognize that we are here to stay and have begun to make friends by buying from us. The first week we have booked orders for forty tons and have negotiations about ready to close for 60 tons additional. You may look for orders right along now and we expect to begin shipping just as soon as we can sort out cars.—California Almond Growers' Exchange, J. P. Dargitz, Secretary and Manager. Sacramento, Cal., Aug. 20, 1910.

Citrus Market

LOS ANGELES, Aug. 24, 1910.

With large receipts of all kinds of fruits the general Eastern market is showing a light demand for Valencias. Regular sizes that are well colored, however, are commanding $4.00 to $4.75 f. o. b. Eastern points. These prices are somewhat under those of a few weeks ago, but probably still a dollar in excess of last year this date. This, considered with the lower grade fruit which is going out this year, makes a condition which is almost phenomenal. Unfortunately much fruit is going out small in size and green in color. These shade the prices given above, often by $2.00 or more.

Lemons are practically cleaned up. This, with the light receipts of foreigns, insures the few which will yet be cut good if not exceptional prices. Everything which can be cut now is going forward almost direct from tree.

Shipments.

Shipments of citrus fruits to date since November 1, 1909, 38,563 cars, of which 24,279 were oranges and 4,284 lemons. To same date last year, 35,553 cars, of which 29,863 were oranges and 5,690 lemons.

NEW YORK, Monday, Aug. 22.—Twelve cars oranges and one car grapefruit sold. Market weak.

VALENCIAS—	Avge.
Stag, A. C. G. Ex	$4.80
Pointer, A. C. G. Ex	3.25
Vista Bonita, A. F. Ex	2.95
Lake Hemet, A. F. Ex	2.35
Mission Indian, A. F. Ex	1.55
Rossmoyne, fy., E. M. Ross	2.35
Rossmoyne, st., E. M. Ross	1.70
Partridge, or., C. C. U	2.60
El Toro, sd., C. C. U	1.60
Titus Ranch, fy., San Mar. G. P. A.	6.85
El Toreador, sd., San Mar. G. P. A.	2.50
Gabriella, xc., Independ't Fruit Co	3.40
Citrus Belle, sd., Ind. Fruit Co	2.60
Golden Pheasant, xc., Ind. F. Co.	2.50
Old Mission, fy., C .C. Chapman	6.00
Old Mission, ch., C. C. Chapman	5.35
Golden Eagle, sd., C. C. Chapman	4.00
Aurora, fy. or., E. Peycke Co	3.90
I. X. L., fy., Benchley Fruit Co	5.55
Premium, or., Btnchley Fruit Co.	4.33
Superior, ch., Benchley Fruit Co.	2.75
Orchard, or., National Og. Co	3.15
Standard, sd., National Og. Co	1.65

Grapefruit, halves—Mahala, $2.15; Swastika, $1.70; Orchard, $1.80. Boxes—Old Mission, $4.15; Golden Eagle, $3.60. Valencias, halves—Vista Bonita, $1.15.

PITTSBURG, Monday, Aug. 22.—Three cars sold. Market steady on oranges and lemons. Warm.

VALENCIAS—	Avge.
Robusta, A. H. Ex., Prenda	$3.40
Violet, D. M. Ex,. Duarte	4.05
Hobo, A. H. Ex., Prenda	2.55
Jasmine, D. M. Ex., Duarte	3.20

LEMONS—	Avge.
Squirrel, A. H. Ex., Arlington	$5.20
Palm Tree, A. H. Ex., Arlington	$4.65

CINCINNATI, Monday, Aug. 22.—One car Valencias and one car lemons sold. Market advancing. Warm.

LEMONS—	Avge.
Pet, S. A. Ex	$5.70
Greyhound, S. A. Ex	5.20
Arab, S. A. Ex	5.50
Duck, S. A. Ex	5.05

Valencias—Pico, S. T. Ex., Whittier, $2.55.

CINCINNATI, Friday, Aug. 19.—(Delayed wire)—Cooler. Market steady on good quality Valencias. Firm on lemons. One car Valencias and one car lemons sold.

LEMONS—	Avge.
Quail, O. K. Ex., Upland	$5.45
Blue Jay, O. K. Ex., Upland	3.25
Coyote, O. K. Ex., Upland	5.05

Valencias—Owl, O. K. Ex., Upland, $2.50.

BOSTON, Monday, Aug. 22.—One car sold. Weather favorable. Market firm.

VALENCIAS—	Avge.
Alhambra, S. T. Ex., E. Alhambra	$4.05

PHILADELPHIA, Monday, Aug. 22.—Two cars Valencias and one car St. Michaels sold.

VALENCIAS—	Avge.
Owl., O. K. Ex	$1.30
Cluster, O. K. Ex	2.40
Knight, or., Ely Gilmore F. Co.	3.55
Regatta, Ely Gilmore Fruit Co	1.10

ST. MICHAELS—	Avge.
Solano, fy. or., Stewart Fruit Co	$1.30
S. S.	.80

CLEVELAND, Monday, Aug. 22.—One car Valencias and two cars lemons sold. Market higher on oranges, steady on lemons. Warm.

LEMONS—	Avge.
Squirrel, A. H. Ex., Prenda	$6.40
Commercial, A. H. Ex., Prenda	3.10
Our Beauty, sd., Sierra Madre	4.75
Palm Tree, A. H. Ex., Prenda	4.70
Trail, Sierra Madre L. Association	6.05

VALENCIAS—	Avge.
Echo, S. T. Ex., Pasadena	$3.50
Arroyo, T. T. Ex., Pasadena	2.45

ST. LOUIS, Monday, Aug. 22.—Two cars Valencias and three cars lemons sold. Hot.

VALENCIAS—	Avge.
Echo, S. T. Ex., Pasadena	$2.55
Basektball, S. A. Ex	2.00
Arroyo. S. T. Ex., Pasadena	2.30
King, S. A. Ex	2.00

LEMONS—	Avge.
Family. Q. C. Ex., Corona	$4.55
Gavilan, Riv.. Ex., Riv	4.55
O. I. C., Q. C. Ex., Corona	4.15
Housewife, Riv. Ex., Riv	4.25

POULTRY AT THE STATE FAIR.

Considerable interest is being manifested among the poultry breeders of the state in the forthcoming exhibition to be held in conjunction with the State Fair at Sacramenta, September 3 to 10, 1910. Entries will be received as late as 6 o'clock p.m. Friday, August 26. Judging will be done September 3. In the selection of judges the management is to be commended, first for the high character of the men selected, and second, for the fact that they represent the state as a whole. Northern California finds its representative judge, Henry Berrar, in the saddle; Robert J. Venn of Fresno, has probably done more than any other one man to sustain a healthy interest in Standard-bred birds in the great San Joaquin Valley, and he will call out strong exhibits from Central California; while S. Tyler, the veteran of 50 years in the show room will sustain Southern California's reputation at the Fair for progress and thoroughbred birds. Breeders contemplating exhibiting can secure premium lists by either sending to J. A. Filcher, Secretary, Sacramento, or to the Chamber of Commerce, Los Angeles.

Business Notes

WILL SAVE DOLLARS FOR YOU.

The new catalogue of Draper's Cut-Rate Mail Order House just off the press is ready for free distribution. Every reader of the Cultivator should send his name in for a copy. Draper's combination offer as advertised in this issue of the Cultivator is a money saver for everyone. Write for particulars to Draper's, 514 South Main St., Los Angeles, Cal.

A HUGE WORKSHOP

Nature is a wonderful chemist. Constantly at work down in the bowels of the earth, her seething cauldrons are going day and night.

Gold, diamonds, and other beautiful stones and precious metals are all from Nature's laboratory and attest to her artistic skill. Iron, copper, coal, salt and asphalt are among the innumerable products which show the endless variety and practical forethought for man's needs. Nature works her wonders carefully and well.

For centuries nature's wonderful alchemy has been forming this natural asphalt and mutely waiting for the time when man should have need for it and recognize its value.

The Barber Asphalt Paving Co., Philadelphia, were the first among the people of modern times to recognize the immense value of Trinidad Lake asphalt and adapt it to commercial uses.

Genasco Ready Roofing is the product of their experience and skillful use of this natural asphalt and is the best possible roofing for all purposes. It defies storms, heat, cold, and every other weather condition.

Genasco is adapted to every building on the farm, from your residence to the chicken house.

It is easy to apply and saves the expense of experienced roofers, and can be laid by any handy man about the farm.

Valuable information on the subject of roofs is incorporated in The Good Roof Guide Book issued by the Barber Asphalt Paving Co., Philadelphia. They will send a copy to anyone for the mere asking.

A thirty-two page nursery catalogue filled with meat from start to finish has been issued by the Leonard Coates Nursery Company, Inc., Morganhill. The catalogue begins with a bit of the history of the company from its beginnings in 1878 in the Napa Valley to its securing of its present location in Santa Clara county. Mr. Coates, the manager, makes a particular feature of pedigreed stock, also of growing most of his stock without irrigation.

NO HOOF, NO HORSE.

Statistics show that 80 per cent of all horses are lame, and that 80 per cent of the lameness is caused by hard and contracted hoofs. Especially are the long, dry spells of this section productive of these troubles. Owners of horses should realize this, and give proper attention. They should be kept soft, and at the same time toughened and nourished. In selecting an application for this purpose, it should be remembered that a horse's foot is from 60 to 70 per cent water, and that grease and water will not mix. This is the reason why it is really worse than useless to apply ordinary ointments. They not only will not penetrate themselves, but they keep other moisture from penetrating, and any horseman knows what this means. For some time there has been on the market, in the East, a wool fat preparation for this purpose that has given great satisfaction. Wool fat is not a grease, but readily mixes with water and is penetrating. It is not only a medicine of itself, but it acts as a vehicle to carry to the afflicted parts other medicinal properties that may be contained in an ointment. There has recently been organiezd a company in Los Angeles for the manufacture of preparations with refined wool fat as a basis, and for several months past they have been introduced to horsemen in this part of the country. As the sale for them is growing very fast, it would indicate that they are meeting a long felt want. They seem to have the utmost confidence in their remedy, as they offer to send a package without any money, to be paid for only if satisfactory. Read the advertisement of the West Coast Manufacturing Company on another page of this paper, and send for a trial package, or send for one of their folders with some good testimonials.

WHITE CANADIAN
Peas
Eastern Grown
Best there is for Cover Crop
Carload just in. Write for sample and price, stating quantity wanted.
West Coast Seed Co.
111-113 Winston St., Los Angeles
Between 4th and 5th St. near Main

Eucalyptus Trees
FOR SALE
AT A BARGAIN.
Make us an offer on 75,000 eucalyptus rostrata and E. tereticornis, from 12 to 24 inches tall; also about 200 flats of seed bed. stock 2 to 3 inches high and on an average about 500 to the flat. Must sell at once.
WYATT & WOLLITZ,
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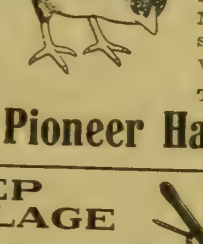

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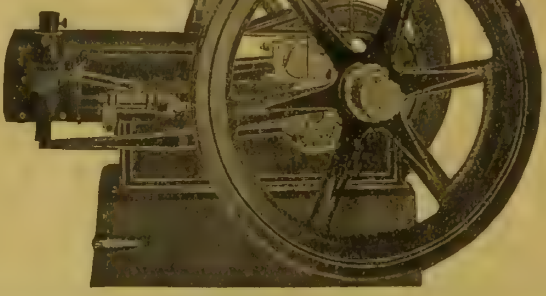

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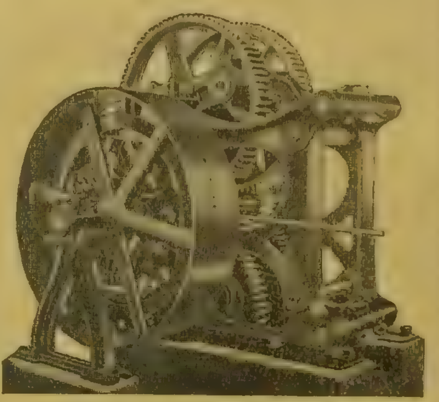

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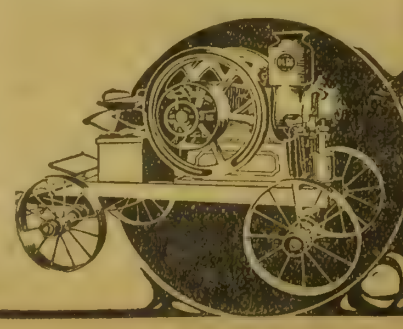

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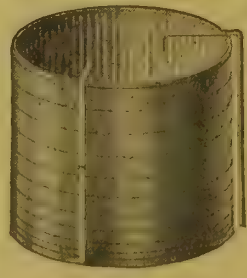

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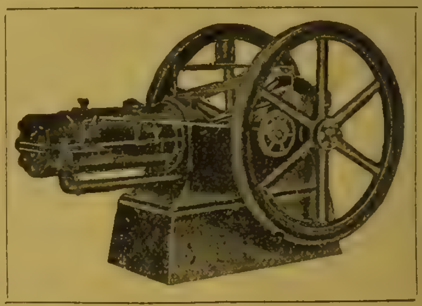

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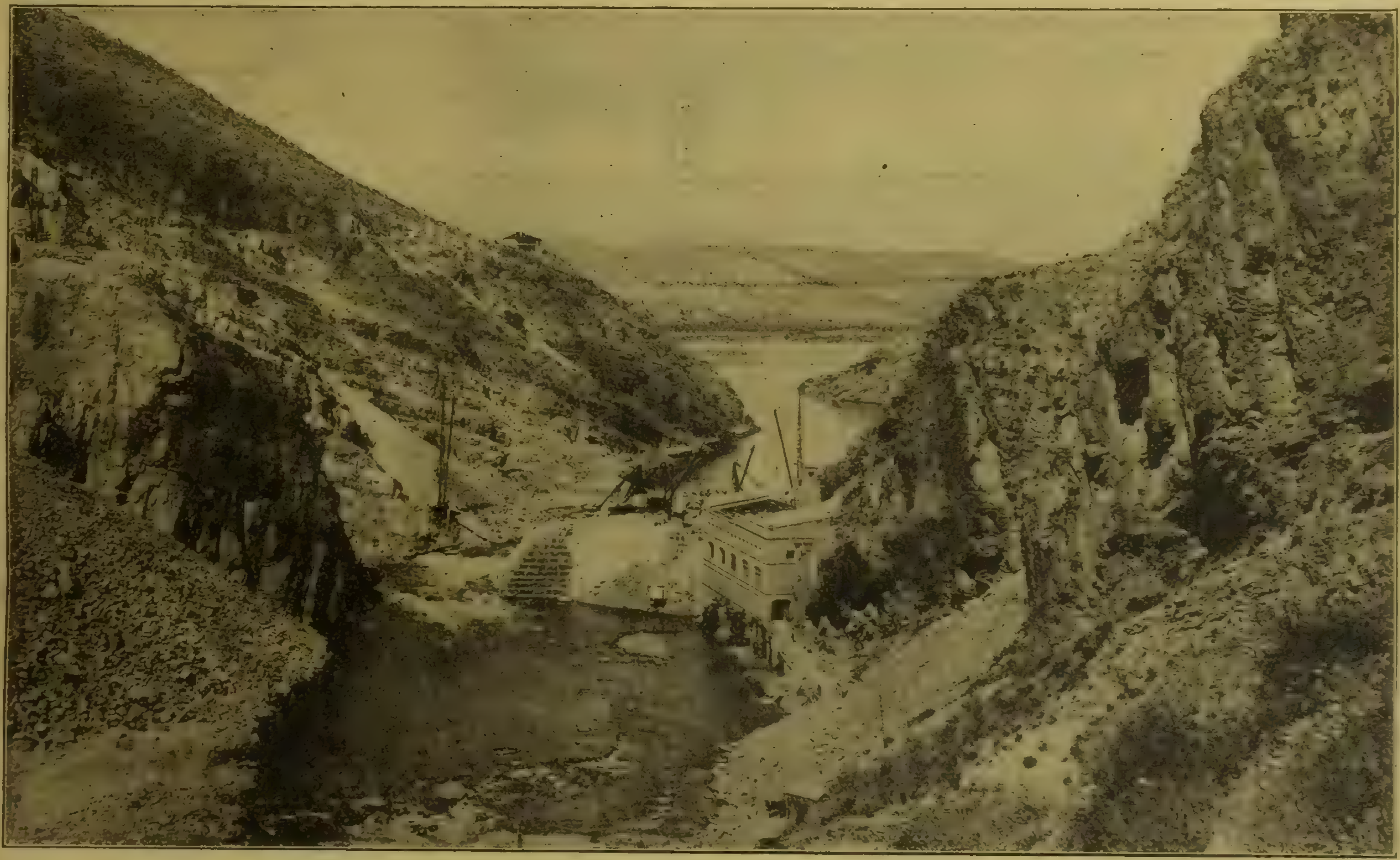

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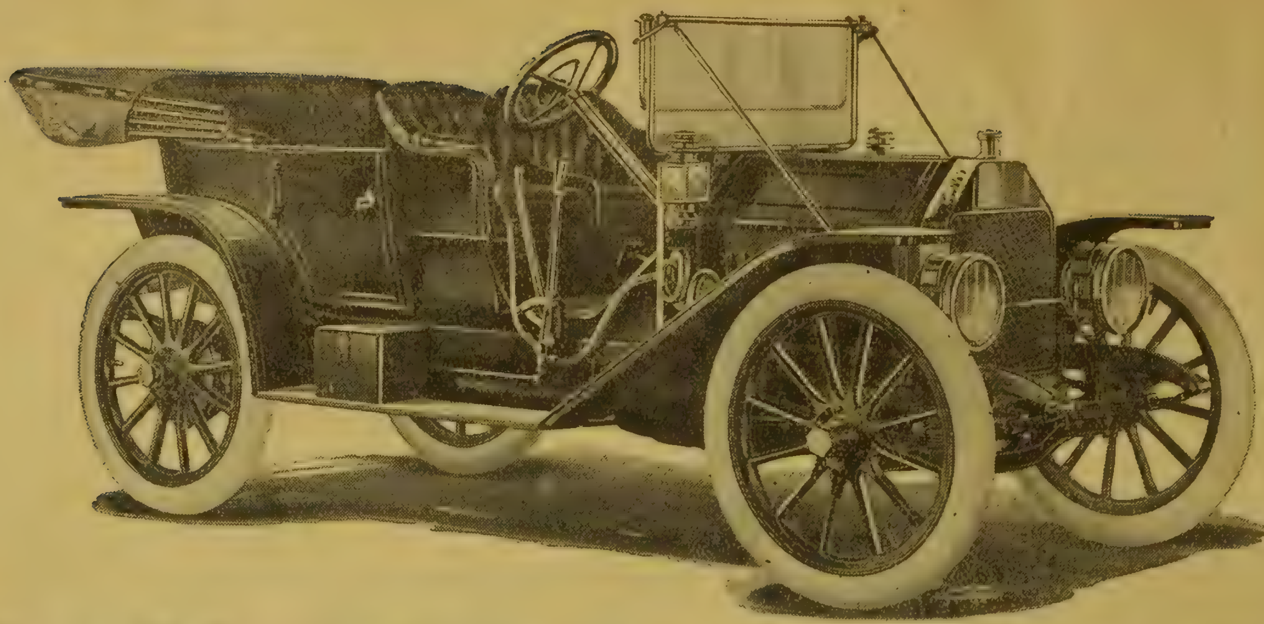

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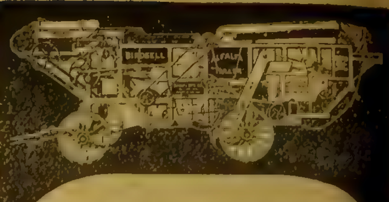

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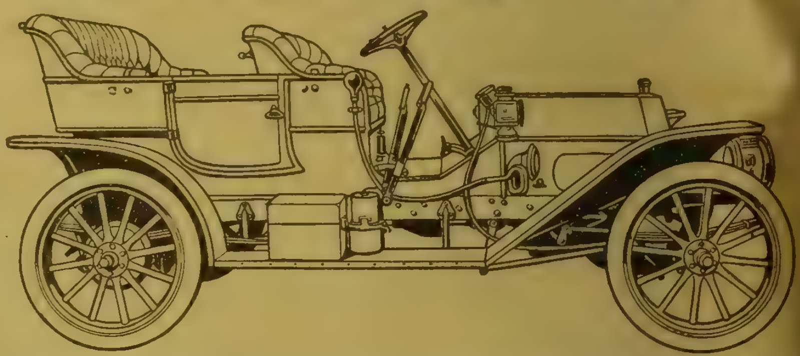

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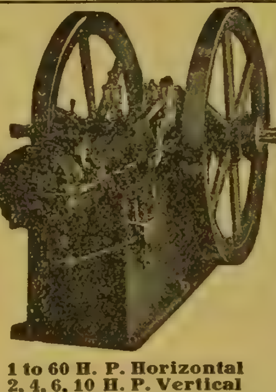

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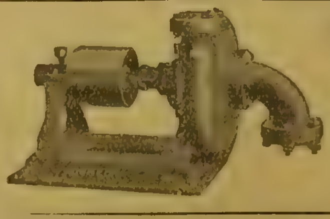

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The Passing of the Man With the Hoe

Taken from an Article by EDWARD A. RUMELEY in August World's Work.

Great Advances in Agriculture Made Possible by Use of Power on the Farm.

IF George Washington should come to life in Pittsburg now, should visit the steel mills, the Westinghouse plant, or a hundred others, he would be hopelessly bewildered. It is all beyond the philosophy of a man who lived a hundred years ago. There is hardly a process which he would understand.

If a contemporary of Moses, who was a good farmer, should come to life and visit the ordinary American farm, he would recognize practically every process.

The industrial revolution, the steam engine, electricity, everything that goes to make up the "steel age," have in fifty years created a greater difference in the production of the world—except in agriculture—than had been made since the days of the Pharaohs. The corresponding revolution in agriculture has unobtrusively begun.

Ten years ago, at the University of Oxford, our lecturer on political economy laid it down as axiomatic that science and invention, the division of labor, the law of diminishing returns, could do little to save human labor on the farm; that the conditions of its toil were nearly unalterable, its processes predestined to be slow. Yet these few years have seen immense advance, and today no forecast can predict the progress of the future, for man is clearly shaking off the heavier shackles of manual toil. Pipe and tabor no longer lead the procession of harvest home, but drudgery goes as well as romance, and a business air sets the thresher to factory pace.

American agriculture must develop enormously along new lines if it is to save the nation from hunger. Within ten years a million new farms have been created, and our farm products have more than doubled. But consumption is still so rapidly overtaking production that our exports of agricultural products last year fell fifty-six million dollars below those of 1899.

Better methods will do much to save us. Science is making the land more productive. It is molding plant life to serve better and more profitably our daily needs—trebling the amount of sugar in the beet, quadrupling the possible corn-yield of an acre. But machinery will do more. By its quick, reliable work it has already vastly improved the quality and quantity of the harvest by confining crop operations within the period when the most favorable conditions prevail.

There are today more gas-engines at work on our farms than in our shops and factories—at least 600,000 of them. And it is estimated that one-eighth of all the power used on our farms s now mechanical. The eighth will soon become a quarter. Light motors are speedily growing heavier, showing that heavier and more general work is now being done by machinery. Plainly, we are seeing the beginning of the era of mechanical power on the farm.

Swift-coming changes make prophecy sure. The old-style farm-wagon is being rapidly replaced by eight or ten different machines, and ts one surviving use—that of carrying the farmer and his family—is now being widely usurped by the automobile, of which several special ypes for the farmer have just been designed. One, half-buggy, half-truck, can be harnessed to a wagon or to light machinery. A single manufacturer is now selling a thousand farmers' automobiles a week, 650 of these going west of the Mississippi.

In the near future, to escape ruin, every farm must have its own power-plant in an efficient motor. Even now, motors of myriad kinds are performing nearly every sort of farm labor—plowing, seeding, harrowing, rolling, reaping, binding, threshing grain, grinding corn. They are shredding fodder, loading hay, milking cows, shearing sheep, drilling wells, running spray-pumps to protect the fruit-trees—even doing chores by carrying water and sawing wood. This ready power on the farm will give country life many of the conveniences of the city. Nearly everywhere the farmer now has the telephone and daily mail delivery. The motor will add electric light and heat and an automatic water-system giving a pressure equal to that of the city main.

Until now, mechanical progress has seemed haphazard. Farmers have studied their own needs. Some of them have been able inventors, and the chance of a market has sharpened the wits of manufacturers. But there has been no competent direction—no one to whom either farmer or manufacturer could look for advice or help in mechanical improvements or the better planning and organization of farm work. Significant of the coming age, a new profession has suddenly been created by this necessity. Eight state colleges are now offering full courses in agricultural engineering.

As machinery multiplies rapidly for every conceivable farm need, as it cheapens in cost and grows in efficiency, we begin to understand the astonishing gist of the thing. See how enormously it increases the acre-efficiency of man, saving human labor in a day when labor is scarce. From plowing to shelling, it takes four and a half hours of work to produce a bushel of corn by hand. By the latest mechanical methods, the whole process can now be accomplished in forty-one minutes. A bushel of corn can be shelled in one minute where it formerly took a hundred. In planting corn, one man in a single day "puts in" twelve to fifteen acres better than the "man with the hoe" can plant one.

The latest harvester equals the work of forty men with sickles. Instead of eleven hours to cut and cure a ton of hay, today it takes one hour and thirty-nine minutes. And so the round of the whole farm. The saving of labor is so vital a thing to the farmer that it often pays to use a machine like the new corn-picker that saves men but not money.

The machine enormously saves animal labor, and a new question is being asked. It was only the other day that the Department of Agriculture told us:

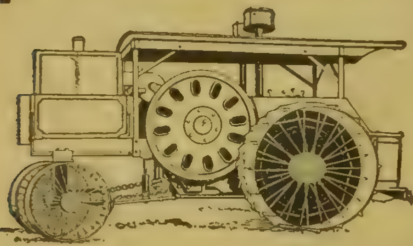
"The comparative merits of animal and mechanical power will in the end probably be resolved into a question as to which source of power will require the least acreage for the production of fuel, owing to the rapidly growing area required to supply food for the human race."

In farm labor we are seeing the passing of the horse and mule. The new internal-combustion engine costs about $90 for each horsepower, while a horse equally efficient costs from $175 to $200. Among many other economies there is the matter of food. The latest engine costs in fuel a half-cent per horsepower-hour; a horse's food costs eight and one-quarter cents. No wonder that 75,000 gas-engines, representing the power of half a million horses, were sold to our farmers last year.

And the vital food-needs of men will hasten the passing of the horse. We are now tilling nearly all of our land that can be cultivated. Every work-horse displaced by tractor or automobile or engine represents an annual saving of more than $50 in grain and forage, which may be converted into food products for the maintenance of the human race. If half of our work-animals could thus be dispensed with, we should effect an annual saving of $600,000,000, an amount equal to our entire wheat crop.

The revolution is coming quickly. The machines we need lie mostly ready at hand. Their general use is only waiting for the cheaper power that we now have in promise. There has been but one great gap, and progress at last is coming where it was needed—in plowing, the work that consumes 60 per cent. of all the energy spent in tilling the soil. It seemed an epoch-making thing when Thomas Jefferson, Jethro Wood, John Deere, and James Oliver—all Americans—fashioned the modern plow from the crooked stick that for thousands of years was used for stirring the earth. But this tool, perfect for the use of a single man, is no longer enough. The interest of inventors and manufacturers now centres in the creation of plows that will do the work by wholesale—meeting by quick work the urgent needs of our sudden-massing populations. And we not only need plows that will break up rapidly and well the great fertile plains of the new Northwest and Southwest. There are the broad areas of the less productive lands that need not only efficient management and systematic organization, but cheaper plowing than any yet known. Foreign competition is keen and intelligent in agriculture above all, and for the future our methods must continually improve to meet it. Wholesale methods, which means mechanical methods, are the order of the day.

It is an unfortunate situation when a man of big capacity and ability to handle large propositions finds his activities restricted to a small field. So far as he goes he makes a complete success and only needs the opportunity to make a record in a larger way and add to the wealth of himself and the community. Unfortunate as such a situation may be, it does not compare with that of a small man on a big ranch. We have all seen the pitiful picture of a man without capacity to handle big things, and with small capital, failing even to make both ends meet on a proposition that calls for genuine bigness. Too many people make the mistake of buying more land than they have capacity to care for, and the result is a dismal failure. The little ranch well tilled is far better.



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Citrus and Sub-Tropical Fruits

COTTONY MOLD OF LEMONS.

By C. O. Smith, University of California, Pathological Laboratory at Whittier.

DURING the past few years this trouble has been on the increase, often causing heavy losses among lemons during the curing process. The disease usually appears at the beginning of the rainy season and continues during the winter months, its abundance being determined roughly by the amount of rainfall. The increase of the trouble also seems to have followed the increased use of leguminous cover crops. The reason for this will be pointed out later in this paper. Already a considerable study has been made of the fungus, and while there yet remains much work to be done, especially on control methods, it is desired to give in some detail an account of the work thus far accomplished.

The Cause of the Disease.

As we have already suggested, a fungus (Sclerotinia sp.) is the cause of the decay, the infection of the fruit taking place from spores produced in the orchard. In the packing house only the sterile form of the fungus is found and appears as a dense, widely spreading, white cottony mold-like growth (Figure 1) that quickly spreads from the original centers of infection to the surrounding green fruit in the boxes. The fungus is very virulent, and a large mass of green fruit may very quickly become decayed. The fungus secretes a substance, probably oxalic acid, that softens the tissue and prepares the way for the mycelium to penetrate the healthy lemon. Because of the soft, mushy character of the decay this trouble is one of the most disagreeable with which the workers have to contend. After a time, in this white growth may be seen rather small, hard, roundish, black bodies, known as Sclerotia, which are attached to the lemons. These Sclerotia form a very important stage in the life history of the fungus. No spores of this fungus are produced in the packing house, and it therefore follows that this fungus should be easier to control than the blue or green molds. The mycelium is very virulent, and healthy fruit in boxes beneath those containing the disease are very often infected. Thus the disease may spread through a whole stack. The mycelium has been known to make its way through as many as a dozen thicknesses of newspaper and infect healthy fruit. It should be noted, however, that there was considerable moisture in the paper and it was probably well saturated from the decaying fruit much of the time.

Life History of the Fungus.

The life history of this fungus has been well worked out, and consists of three stages which have different appearances and perform different functions. The vegetative stage is the white cotton-like growth so common in the packing houses. This growth has no spores, but can spread very rapidly and has the power to infect healthy fruit simply by coming in contact with and spreading over it. A softening of the tissue takes place, after which the mycelium enters and grows through the tissue. In this white growth the black bodies mentioned above and known as Sclerotia are produced. These are nothing more than a very solid, dense mass of mycelium, so formed that it will resist long periods of hot, dry weather or cold freezing conditions of the eastern states. After these bodies have gone through a period of rest and the favorable wet weather of winter has come they revive and again become active. When conditions are favorable one of two things happens: The Sclerotia may send out a fresh growth of mycelium, the vegetative stage, which could easily infect a growing cover crop, or they may develop the spore stage of the fungus. This last is accomplished by sending out a small, funnel-shaped, toad-stool-like growth which has a roundish cup-shaped disk, technically called an apothecium, and a more or less evident stem (Figure 3). In these apotheca are produced the spores. See (Figure 5.) These are formed in rather long, cylindrical sacks, or asci. Hence the spores are called ascospores. These spores are very small and are easily scattered by the wind. They are very numerous and can be seen leaving the fungus as small clouds of dust. They may be carried to the lemons or may infect the cover crop. The spores on the lemons are probably carried to the packing house before any great amount of infection takes place. Germination, when conditions are favorable, will take place within twenty-four hours. Infection is thought to take place through some injury or through the button end of the fruit. When once these spores have gained entrance to the lemon through the button or some abrasion, they produce the cottony mold stage, which in turn may readily enter healthy lemons which are free from abrasions.

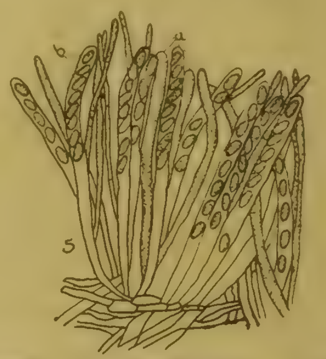

Figure 5. Microscopic section through fruit body of Cottony Mold. (a) Asci, (b) Ascospores.

The Relation Between a Cover Crop and Cottony Mold.

There is no question but that the disease has increased with the increased growing of cover crops. The same fungus not only occurs in the fruit of the lemon, but is also a parasite on certain cover crops, vetch being by far the most common host. While this fungus is very common on vetch, the injury it does to the crop as a whole is negligible. The dense growth of vetch affords a suitable place for the fungus to grow and it also occurs as a saprophyte on any dead or dying vegetable matter. Under the vetch the Sclerotia are produced in great numbers and can readily be found in infested orchards with very little searching. After a period of rest, they are ready the following season, when the winter rains

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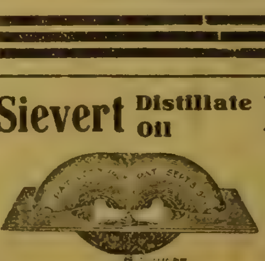

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begin, to develop the spore stage, as already described.

Not only does this fungus appear on lemons as a watery rot, but it is also an active parasite on the twigs and branches of both lemon and orange trees. This is well illustrated in (Figure 2,) where the hard Sclerotia are shown as roundish bodies. From these, under favorable conditions, the spore stage can be produced. Thus, the spores would have easy access to the green lemons. It is probable that these spores could stand considerable drying before they would fail to germinate. This diseased condition of the branches of lemon trees is fortunately not very common.

We have, therefore, two distinct and different methods of infection; first, from the spores that develop from the Sclerotia formed under the cover crop, and second, from the spores developed in the diseased lemon twigs. Either, or both of these sources of infection may be present in an orchard, but by far the worst and most common is that from the cover crop.

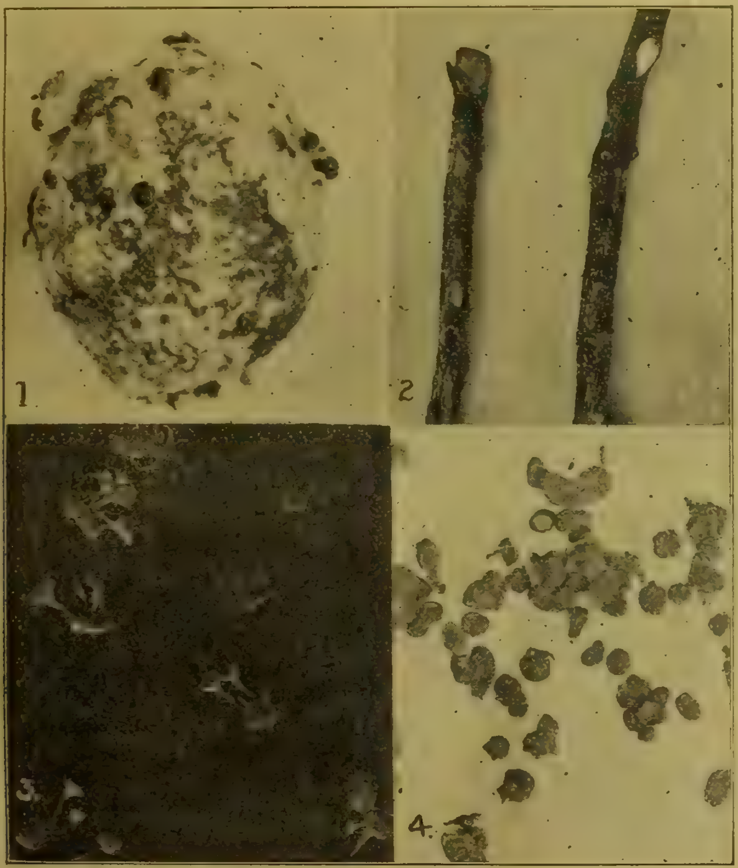


Figure 1. Lemon with Cottony Mold showing Sclerotia, or resting stage. **Figure 2.** Lemon twig showing Sclerotia. **Figure 3.** Ascosporic stage of Cottony Mold. **Figure 4.** Sclerotia taken from a diseased lemon.

Its Relation to Similar Parasites.

The cottony mold (Sclerotinia) belongs to a well known group of fungi, many of which are active in causing plant diseases. Some of these fungi attack various berries and fruits (the dreaded brown rot of the peach and plum being a member of this group), while others are found on various cultivated plants, especially small seedlings. Many and varied plants belonging to widely removed families may serve as hosts for different members of this genus. In our work, we have found this disease on celery, tomatoes, cucumbers, egg plant, alfalfa and fruit and twigs of lemons and twigs of oranges. It is not known definitely whether the fungus from these various sources is one or several distinct species, as the classification of this group is very obscure. Further study, however, is expected to determine this fact.

Laboratory Experiments.

Research work upon this fungus in the laboratory has established the following facts:

First.—Repeated inoculations have proven that the cottony mold is caused by the sclerotinia fungus and no other.

Second.—The white cottony filaments of the vegetative fungus are able to enter and destroy a perfectly sound lemon at any point of contact, no abrasions being necessary.

Third.—Every attempt to inoculate the healthy, uninjured skin of a lemon with the spores from the perfect stage of the fungus has failed. When spores were applied to the entire fruit with an atomizer, they germinated and entered the lemon only through the button. The buttons of green lemons were infected much easier than those of tree ripes or tent cured fruit.

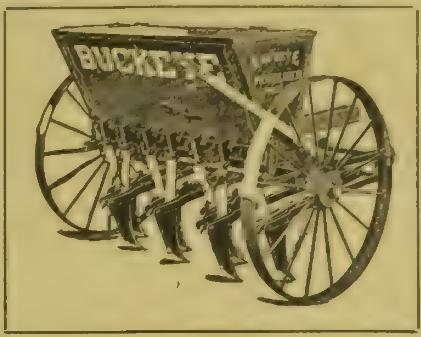
Fourth.—This fungus has repeatedly been carried in pure culture through its entire life history from ascospore to ascospore in the laboratory.

Fifth.—Ascospores developed from pure cultures, isolated from a diseased Valencia orange branch, produced the typical cottony mold when inoculated by punctures into lemons. The same results were secured with the ascospores isolated from the Sclerotinia from diseased tomatoes.

Control Measures.

On account of the nature of this fungus, it is necessary that control measures should be carried out largely in the packing house, for we certainly cannot afford to give up our vetch cover crops. The logical point to fight the trouble is the washing tank. The disinfecting copper sulphate solution, as commonly used in fighting the brown rot, may not be effective against the cottony mold, for two reasons: The cottony mold spores are more resistant to blue stone than are the brown rot spores, and the solution may be weakened more than is realized by a slight alkalinity of the water. We have demonstrated in the laboratory that a solution of blue stone, one pound to two hundred and fifty gallons, will not injure lemons, while one pound to a thousand gallons is commonly used for brown rot control. To control the cottony mold it is necessary to use a solution of copper sulphate strong enough to kill both kinds of spores. This will mean a wash water approaching more nearly the limit of lemon endurance. In order to accurately mix and to prevent the copper sulphate solution from being weakened by the alkalinity of the wash water, it may be necessary to first neutralize the water before adding the blue stone. This can easily be done with a little acid without affecting the metal tank, provided the exact composition of the water is known.

The Laboratory is now working on a study of these waters and hopes to be able soon to give more explicit directions in regard to particular types of wash water. A further study of control methods is to be undertaken this coming winter.



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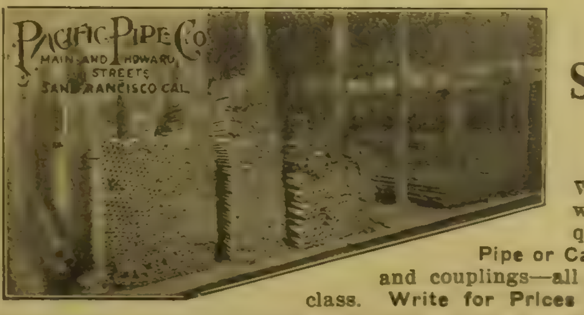

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APRICOT SCALES.

By E. O. Essig, Santa Paula.

IT is now a matter of fact that the apricot grower must take some definite steps towards insect control, for inspection has shown that not only are trees in many orchards suffering from scale pests, but that a great deal of fruit was this year nearly ruined by black smut caused by these insects. It is very important that the dried fruit be clean in order to get the highest market price, and it is also important that all orchards be cleaned up in order to realize a good crop. In citrus districts many, if not all, of the orchardists are making a campaign against Black Scale. Apricot growers must do the same thing. But among the apricot orchardists there must exist a co-operation in this very work. I am informed that in a certain district, which is strictly an apricot growing section, that a few progressive growers have endeavored to persuade their neighbors to join in the work of spraying for scale pests, and that their efforts have been disregarded to such an extent that they have become discouraged in the undertaking. It is the duty of this office to take up the matter of just such a case and see that all infested orchards are cleaned up and that the efforts of those who desire to do this are not in vain. If one man sprays and his neighbor does not, it simply means that the one who sprays must continually do so because of reinfections from his neighbor's orchard. Far better is it that the growers comprehend the evil in time and co-operate willingly and intelligently in the work of subduing scale pests. It is upon this supposition that I write this article, and offer these suggestions for the best methods to be used in this work.

Scale Pests.

Three serious insect pests exist in large or limited numbers in nearly every apricot growing district of Ventura county. There are other pests which exist elsewhere in California, and are being kept out by strict quarantine methods.

Black Scale (Saissetia oleae) is common in nearly every orchard bearing fruit of any kind. It works upon citrus, olives, apricots, plums, apple, peach, prune. Also on oleander nightshade, rhus (schumac), ceanothus, buckhorn, pepper trees, and many other cultivated and wild shrubs. It is, therefore, a constant nuisance and becomes especially serious to citrus and apricot growers. Some have said that there is little use to fight it in an orchard because it is in all of the mountain brush. This is a serious menace, but we can keep it down in our orchards, and because it can be done, we are compelled, and it pays big, to do it.

Courtesy Porterville Chamber of Commerce.

A Tulare County Big Tree.

Citrus trees can be profitably fumigated, but the stiff branches of the apricot trees makes it almost impossible to cover them with a fumigator's tent without tearing it to pieces. Then, too, the apricot being a deciduous tree, it is much more adapted to spraying than the evergreen citrus tree, for two reasons: First because the fallen leaves are no hindrance in getting the spray all over the limbs and body of the tree. Second because the tree is more or less dormant during the winter months and can stand a much stronger solution than the foliage of a citrus tree.

This scale is easily told by its color when fully grown and by the more or less distinct "H" upon the back of the young, which vary from a light yellow to a reddish-brown color.

Apricot Scale (Eulecanium armeniacum) is limited in its distribution in this country, but wherever it occurs it has become a greater nuisance than any other apricot insect pest. It is a soft-brown scale, rather flat and often overlaps its neighbor. It attacks all parts of the tree, but usually prefers the last year's growth. When fully grown it is about one-quarter inch long and two-thirds as wide. At present it is known only in the Santa Clara Valley.

Prune Scale (Eulecanium pruinosum). Also commonly known as Walnut Scale, and more properly known as Frosted Scale, because of its frosted covering, is of little consequence at the present time. In shape it resembles the apricot scale, but is a great deal larger and is covered with a whitish-powdery wax. Many of the adults lose this covering and appear dark brown. Its work is similar to that of the other mentioned forms.

Similarity.

These three scales are very similar in general appearance and in manner of growth and food habits. All belong to the family Coccinae which includes all unarmored scales. Their coat is simply a thickened epidermal layer which hardens as the insect ages. In methods of eradication it is therefore necessary to take this in consideration, for the spraying must be done before the coat becomes too hard and resistant.

All lay eggs beneath the shell and as the young hatch they first settle along the midribs of the leaves. The broods are usually somewhat even so that at one season of the year all are of a certain age, but this is not always the case especially near the coast. Whenever the brood is uneven it is sometimes necessary to spray twice the same season in order to get all of the insects at the right age for successfully killing them. The young appear with six legs and move about very freely, settling at first on the leaves, but before these begin to fall the young move in on the new growth and settle down to one place. In case of the Black Scale, the young gradually lose their legs as they grow and the adults are entirely destitute of any locomotive power. But in case of the apricot and prune scales they retain their legs throughout their entire existence and move at will, although they are wont to remain in one place all of the time. Males alone have wings and can fly, but they do not feed at all and do no damage.

Destructiveness.

All scale pests live directly on the sap of the tree, and thereby greatly reduce the vitality and bearing power of it. They also secrete a honey dew which is exuded over the foliage and fruit of the tree. This honeydew is the feed of a black fungus, and it grows wherever it is found. The smut then depends upon the amount of honey dew, or more directly upon the number of scale insects upon the trees. In many orchards this smut has greatly reduced the selling price of the fruit—and by stopping up the breathing pores of the foliage has threatened to destroy the crop. The only remedy is to get rid of the scale.

Modes of Distribution.

These pests are usually distributed by the aid of some natural or artificial means outside of themselves, for only the males fly and in many species the females lose their legs when young. Most always this is accomplished, when the young have the power of locomotion, by the wind, birds, and ants, and also by means of boxes, pruners, pickers, cultivators, etc. The young crawl on anything and have been found upon the legs of birds, and even upon ladybird beetles. Due to their extreme smallness the wind blows many of them from tree to tree, so that they are rapidly distributed from one orchard to others.

Boxes or pickers from other orchards carry the young, and cultivators and horses distribute them over the entire orchard. It takes only a few individuals on a single tree to infest, not only a single orchard, but the entire community.

Methods of Control.

Under these methods we may sum up all under two heads as follows:

Spraying.

For these scale pests a contact insecticide is necessary. There are many such [These will be given in a later issue in a spraying calendar now in preparation.]

Time for Spraying Scale Insects.

The important thing in spraying for these scales is that it be done before the insects get too large. The smaller they are the better the results and the less often it will be necessary to spray. But it is also important that all the eggs be hatched before the spraying is begun in order that none appear after the application. This matter is very well regulated by nature. As soon as the leaves fall is the time to spray. In some orchards all of the leaves are not off until November. In such cases do not wait until all of the leaves are off. Spray before the first of November at the latest. Any time after the first of September is all right, and the sooner after this date the better.

Essentials in Spraying.

One of the most important factors in spraying is pressure. Without it the work can only be done unsatisfactorily. With it all portions of the tree, including every small crevice may be drenched in such a way as to do effective work on the scale. Good work cannot be done without at least 150 pounds and 200 pounds will give much better results. By this it is clearly seen that a power pump is almost necessary, but the work can be done by hand power, although it is very much slower and less efficient. Wherever possible it would pay a number of orchardists to get together and buy a good power pump. The cost would be about $300 and on a large acreage this would be saved the first year.

In all work a good agitator is desirable and necessary in most operations, especially so when using dis-

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The cost of labor is an important factor in spraying work, often equal to many times the cost of chemicals, and in doing poor work this is just as great as when good work is done. See to it that the men handling the nozzles are thorough and regular in methods of application. This can be ascertained by keeping a careful record of the number of trees each tank will spray.

The work cannot be done when the trees are damp or when a strong wind is blowing.

Parasites.

For Black Scale we have the African Fly (Scutellista cyanea) which has been distributed over the entire county for a number of years. It is an egg parasite and due to the fact that a greater part of the year the scales are not laying eggs, the parasites die off for the want of food. For this reason this parasite can do effectual work for only one or two years and then the scale gets bad again. After many years of trial, it is generally conceded that this parasite can never cope with Black Scale and too much stress should not be laid upon its value as such. Spraying deciduous trees and fumigating citrus trees are much more effective and lasting.

This year we are introducing two new parasites for this pest, both of which work upon all stages of the scale. It is the belief that if these can be established they will do excellent work, but it will take several years to demonstrate this.

For the Apricot Scale we have only one efficient parasite which is known scientifically as Comys fusca. The adult female deposits her eggs into the young scales as soon as they hatch from the egg.

In the worst infection in this county 500 colonies of this parasite were introduced from the State Insectary. From this point it will naturally spread with the scale. Other colonies were liberated in the apricot districts of the county, especially at Moorpark.

The success of all our efforts depends largely upon the co-operatiou and support of the growers themselves.—E. O. Essig, Commissioner, Ventura County.

VOLCANIC NITRE ROCK FERTILIZER.

THE Fertilizer Control again finds it necessary to call attention to the pernicious activity of vendors of worthless fertilizing materials. We have at hand a business card of the St. George Placer Mining Company, of Oakland and San Francisco, entitled, "Natural Volcanic Nitre Rock Fertilizer," (non odorous) with the aditional statement: "Carrying a high percentage of soluble salts, i. e., nitre, potash, phosphates chlorides, bromides and iodides." On the reverse side are several chemical analyses said to represent the natural volcanic nitre rock taken from the properties of this company and from adjacent fields.

We have examined a sample of this material received from a prospective purchaser of stock in this company and find it to be not worth the cost of spreading on the fields as fertilizer, to say nothing of the purchase price.

We learn from Mr. W. C. Riddell one of the chemists quoted that of the three analyses only the first applies to a sample taken from the lands of this company. Of the remaining two it should be said that because of their high content of sodium chloride they would probably do more harm from a fertilizing standpoint than good, if applied in the raw state. As to whether these latter could be economically manufactured into high grade nitrate of soda and complete with the comparatively cheap nitrate from Chile cannot be definitely stated. Furthermore, it is of no present interest as to whether or not they could, but it is quite certain that the only material from the lands of this company represented by analysis could not be economically used as a fertilizer either before or after refining.

Mr. Riddell further informs us that of several analyses made by him of samples submitted by this company, the only one containing more than 1.5 per cent nitrogen was the one published and that such publication is necessarily a misrepresentation of the deposit as a whole.

So far we have heard of no actual sales of this material as a fertilizer and are inclined to believe that operations have been confined to selling stock in the company.

All persons are, accordingly, warned that the evidence presented as to the value of these deposits is, to say the least, misleading and that investments in such an enterprise should only follow an investigation by a properly qualified expert in the employ of the investor.—John S. Burd, Chemist in Charge, Fertilizer Control, University of California.

PRUNE OUTLOOK.

By J. W. Jeffrey, State Horticultural Commissioner.

I am informed upon the best of authority that the world's supply of prunes this season will be very short. This information comes from both growers and dealers, and there seems to be no doubt that to every civilized country on the globe, California prunes will find their way during the next year. Consequently, a rare opportunity is offered to demonstrate the superiority of our product.

Motives of self interest, as well as state pride in enhancing the value of a product for which there is a world's demand, should prompt the grower—the man makes the crop—to give every essential detail of production the greatest consideration. Every step in the handling and curing should be taken with great care and intelligence in order that results may be satisfactory, and place California in a position to compete for the trade at prevailing high prices. The maintenance of good prices should be the aim of growers, and the only certain way to realize these hopes is to keep up the standard of quality to the very highest degree, and this stand is deserving of careful consideration.

Growers whose intelligence and progressive spirit can always be relied upon in real business emergencies need no urging in the way here suggested. But many prune growers do not come under this progressive category and their policies this season, if continued, may do lasting harm to the trade. Should the reputation of the California prune this year receive a set-back as the result of careless or indifferent methods of curing, it will undoubtedly have permanent injurious effect upon the industry.

To accomplish the best results, growers are urged to exercise the utmost care in handling their prunes, seeing that the fruit is carefully lye-dipped, then rinsed before put upon the trays. The fruit should be thoroughly and properly cured before being taken up, and all slabby and defective fruit should be discarded. In most cases the growers use too much lye, which results in making the prunes red in color and more or less puffy. The quantity of lye should be limited so that the fruit will show no checking except perhaps in the very hardest prunes. Most growers shake their prunes off too green. The best prune is that which drops of its own weight from the tree. The keeping quality is much improved by rinsing after the lye dip.

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Los Angeles California

Live Stock and Dairy

Dairymen and stockmen are requested to write of their experience. Mrs. Sherman is always willing to answer queries and this, with experience of other workers, will make this department of greater value.

HIS ROYAL HIGHNESS.

By Mrs. Minna E. Sherman.

WITH what arrogance the head of the dairy herd rules the barn yard when unrestrained of his freedom! It is not worth the risk of human suffering to let him roam at will, for a sire that will not fight wickedly, lacks prepotency. The best of them, from a breeder's standpoint, is the worst of them, from the standpoint of making him a pet and companion. He is a gentleman of great dignity and we must be equally reserved if we are to handle him with firmness. It is a case of severe justice tempered with mercy.

Beware.

The pictures that appear sometimes in the agricultural press of children perched on the back of some great brute, should never be printed. They merely encourage some foolish unthinking person to try to risk the precious babies for an idle whim. The animal that today is gentle, tomorrow may gore his master. The supposedly gentle sire and the supposedly unloaded gun have cost too many lives. Do not be pigheaded enough to suppose you have the only gentle, affectionate, trustworthy animal, for none of them are safe. Like the good Indian the absolutely gentle sire is dead.

Separate Quarters.

Wallace speaks of the former practice of killing the males on the Island of Jersey when they were three years old as a precautionary measure for safety of human life. While today we do not sacrifice a sire at three years of age, if we are wise we confine him in special quarters. At an earlier time one way was to handle this unruly member of the herd by putting him to work on a treadmill. He could cut or grind feed or run a separator. Still earlier he was yoked up with an ox to haul out the manure. These things we have had to give up as the ordinary hired man does not have the necessary experience to handle them. He rarely stops long enough to learn very much of any one thing.

Controlling.

The youngster should have a ring placed in his nose when a yearling, with a halter on the head and he should be handled with the staff the same as an older animal. The halter for the younger animal has a snap that fastens into the ring, on the end of a strap that passes directly up the center of the face to meet a strap coming around the crest under the horns. The three strap ends are joined on to a heavy iron ring directly on the forehead. When the animal reaches the age of three his horns should be taken off completely. The halter that he then wears should be made like a cow's halter with the addition of the heavy strap down the center of the face, having the snap on it to fasten into the ring.

Pens.

After the age of two His Majesty should be kept in a yard with a sleeping and feeding shed in one corner. The yard should be good-sized and have a strong board fence around it. He should be fed there and kept there all the time. One man should attend to him as far as possible. When it is necessary to change him to some other place avoid rushing him around. More animals are made vicious by running them with a rope swinging over them than in any other way. Even a two year old, if he is any good, will turn on a man on horseback if he is hustled along faster than he cares to travel.

Moving.

Open the door of the small yard and come away a short distance. In a few minutes out he will come, and the first thing he will do, will be to drop to his knees and throw dust over himself. Let him play the dunce generally for a few minutes until he is tired of it. When he stops for a few minutes open the next gate and when he trots out have some one gently shoo him from the wrong direction and he will go readily where you desire. When necessary to drive him any distance a couple of cows turned out with him, will make it easy to drive the bunch along.

Precautions.

The man that is handling a mature animal should always have a good strong pitchfork at hand to discourage promptly any tendency to playfulness on the part of His Majesty. The strong bull staff with a heavy clip is necessary to handle with safety any mature animal. While it is often recommended to have a good blacksnake at hand, I think them little use if the animal is really vicious. The only control possible is to keep him from striking by having something with which to hold him at bay. Never trust His Majesty by turning your back to him. If he does not come at you that time, just remember he is like a note at bank, accumulating interest for the next time.—M. E. Sherman.

There are too many people raising pigs for market today who forget that the most profitable porker is the one raised in four to five months and sold without fattening, at a weight of 100 to 150 pounds.

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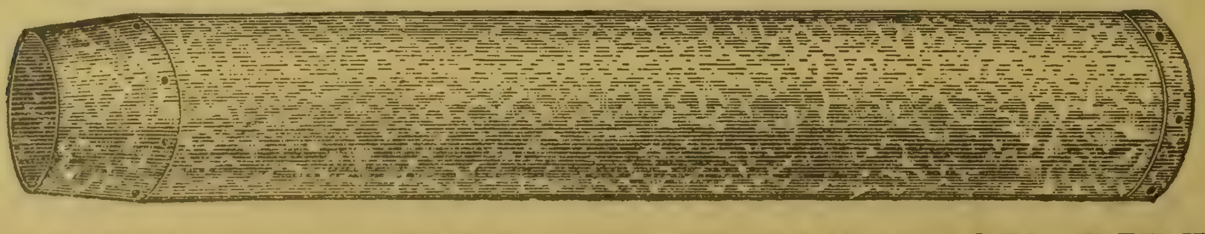

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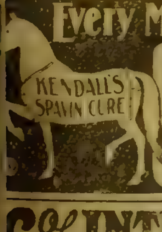
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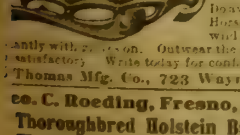
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PREVENTING SWINE DISEASE.

Every feeder who has taken care of hogs knows by experience that it is easier to prevent a disease than it is to cure one that has already attacked your animals. Every pig and hog is supplied by a natural force for resisting disease. The vigorous, healthy hog, with all of its organs in proper order for performing its necessary functions, is least liable to take a disease and will throw off most troubles which the weak hog falls an easy prey to.

Part of the trouble comes from allowing the hog to get out of condition. The hot weather dries up the pasture and when the juices of the plants are meager or deficient, constipation follows very frequently, and with this trouble they are free to invite most any kind of disease that comes along.

Therefore one of the necessary preparations for preventing disease is to stop constipation. How will you do this? says one. If they are in bad shape before they are observed, it may be necessary to give them a dose of salts, but if it is just starting in or if it has not commenced, feed a small portion of oil cake meal in their slop, or if you have sweet corn ready to cut, give them stalk and all; it will keep them in good condition. Care should be used to give them only a small ration at first, until you have gradually increased the quantity thrown to them to as much as they will eat after a few days.

A change of food should always be introduced gradually, to prevent trouble of the bowels, as it would be easy by overfeeding to start up scours, which would cause loss of flesh and injury. It often occurs that hogs are required to take their water from a creek or pond that dries up during the hot spells and is not noticed when the farmer is busy with his crops and harvest, and this causes constipation. There is no success attainable without watchfulness and work. You cannot expect the best results unless you give good service to your animals. It pays you to do it, and it ought to be done by every progressive breeder and farmer.

Look after the pigs closely and it will pay you well.

Be careful in making a purchase not to introduce a new pig into your herd until he has been quarantined, as this is often the way disease enters a herd. The pig may have been perfectly healthy when he left his owner, but during the passage he may have taken in the germ that results in disease, and, therefore, care should always be used in thus protecting the balance of your herd.

The excessive heat that has prevailed over the country the past month has been pretty hard on the hogs and pigs, especially where no proper shade is provided. The hog, as we have frequently said, should be taken care of and provided with shade, and if there are no trees or bushes, it should be arranged by temporary sheds. As a preventive of disease it is partial insurance to keep the hog in strong, vigorous, healthy condition, with all of his organs doing their natural work, and nothing is so fatal to this as constipation. It is the forerunner of so much trouble that it should be avoided by all proper means. It usually comes through inattention during this season of the year, when farmers are busily engaged with their harvest and other farm work.—American Swineherd.

Cream Separators, all sizes and prices. O. J. Weber Co., 225-227-229-231 East Sixth street, Los Angeles.

KIDNEY WORM.

The disease that is sometimes called "kidney worm" and is supposed to be caused by small worms in the kidneys which weaken the hog so that he loses control of his hind parts, is more properly called rickets. This disease is caused by improper nutrition. There is a deficiency of mineral matter in the feed. Prevention then for such troubles is properly to feed the hog. It is gradually beginning to be recognized that the mineral constitutents are just as important in a ration for swine as are the protein, carbohydrate, fat and water. Furthermore, a hog should have various kinds of mineral water. The cure for this disease is said to consist in feeding lime or lime water and injecting 1-30 of a grain of strychnine hypodermically on the inside of the thigh. In the case of swine, however, one ounce of prevention is always worth more than 10 ounces of cure.

It is possible that our inquirer by treating his hogs with soft soap introduced into the system the necessary mineral ingredients that were lacking and thereby cured the disease. The writer's recommendations are that hogs should at all times have free access to various mineral substances such as salt, charcoal, air-slaked lime or ground lime-stone, bonemeal or rock phosphate, and wood ashes. Besides these, a hog will also relish coal cinders, clean soil and various other things that may be picked up if the opportunity presents itself.—Breeders Gazette.

HORSE NOTES.

Teach a team to pull a light load right and they will pull a heavy load right.

Never scold a team for breaking an evener.

Load light at first, and heavier afterward.

Never pull a team when they are out of breath.

Do not allow a team to stop at will but stop them soon afterward.

Short stops and often, is the rule for resting horses.

As a rule, when horses are overdone it is done inside of a few hours.

A horse will seldom run away if he will stop when told to do so.

It is all right for your horse to have speed if you never find it out.

Move a little yourself to get started, instead of asking your team to make up lost time.

A horse, like a boy, should be taught to mind because he wants to instead of because he has to.

The heavy, well muscled jaw is a sign of strength in a horse.

A horse is no better than the feet he stands on.

The way to get a good, fast walking team is to not overload and not trot them. Two 1200-pound horses, on a fourteen or sixteen inch plow are overloaded. They are loaded too heavily to walk three miles an hour. Three horses on the same plow will make the work lighter and reduce the cost of plowing.

ONE REMEDY.

"My wife is getting awfully strenuous," remarked Whiffles. "Yesterday she broke a plate over my head. What would you advise me to do?"

"Well," replied Sniffles, "you might buy cast-iron plates."—Judy.

Anthrax Cure, Milk Fever Outfits. See O. J. Weber Co., 225-227-229-231 East Sixth street, Los Angeles.

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No Hoof, No Horse

U. S. statistics show that 80 per cent of all horses are lame and that 80 per cent of the lameness is caused by hard and contracted feet. As a hoof softener, toughener, nourisher and grower there is nothing equal to

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Small Fruits and Vegetables

THIS MONTH.

NEARLY everything may be planted in the garden this month, but especial attention should be given to onion sets, peas, wax or green beans, cabbage, cauliflower, celery and rhubarb roots. If planted now these will give vegetables in time for holiday eating. A little extra care will need to be taken in the planting for September will have hot days which will crust the soil so that some of the smaller seeds, especially lettuce and radishes may fail to break through. A mulch of fine strawy manure or a protection afforded by coarse sacking material thrown over the ground, with a little care as to regular sprinkling, will bring success.

INTRODUCTIONS FROM THE ORIENT.

A bulletin recently issued by the U. S. Department of Agriculture says the Orient still remains almost unexplored and unknown as to its agricultural treasures, and economic exploration rather than scholarly research is needed to make that land known and its value appreciated, and to secure for the United States most useful agricultural introductions. There are to be found some of the best cultivated varieties, developed by the combined efforts of man and nature for thousands of years; and there, also, are almost all of the wild types which our prehistoric ancestors utilized in producing the cultivated crops of our time.

The report under review deals especially with the useful plants which should be introduced into the far West and Southwest from that portion of the Orient known as Palestine. Already the Smyrna fig and Thompson's seedless grape, among other fruits, Kherson oats and hard Russia and Turkey wheats, among cereals, have been introduced into the United States and made it possible to extend cultivation to regions heretofore untilled, and it is believed that what has been done in this direction is but a splendid beginning of a most promising future possibility.

This land closely resembles California except as to the extent of area; in fact, is practically a California reduced to about one-twentieth in size, but markedly similar in general topography, climate, vegetation, and agricultural and economic possibilities. Like California, Palestine is longest from north to south; it, too, has very high mountains, and very deep depressions. Passing from west to east in either, there is the littoral region along the coast, the zone of hills and plateaus, then the long valley in each, while still farther east are fertile plateaus, finally turning into arid or desert lands. Each, too, has a dry warm season, and a humid and more temperate one. Palestine is even more favored than California with regard to winter temperature, for although as in California, the thermometer rises high in summer, it rarely drops in the winter to the freezing point. Snow is rare even on the plateaus and farmers in almost all parts of the Holy Land are safe from any damage by frost.

Curiously enough, the list of flora of this small territory of Palestine includes approximately the same number of species as that of California—about 3,000. In both sections evergreen shrubs predominate. The same forms of vegetation, often the same genera, are found on Mount Tamalpais, California, and Mount Carmel, Palestine; the maquis formation of Palestine is to be compared to the chaparral and chamiso of California; and the forms of vegetation of the Lebanon and the Hermon mountains are much the same as those of the western slope of the Sierras. This analogy of the flora of Palestine with that of California justifies the expectations of the best results from their introduction into the last named state.

Among the large number of wild species and varieties found in Palestine is the wild emmer, from which our cultivated types of wheat and related cereals seem to have been derived. The author of the paper found large areas on the slopes of Mount Hermon covered with this cereal and it was found growing near an eastern branch of the Jordan, 500 feet below sea level, and upon the slopes of the mountain, 6,300 feet above sea level, or in the zone of alpine plants. By selection and crossing of this wild cereal, which prefers poor, rocky, shallow, dry soil, and thrives without any cultivation, it is thought possible to produce new races which will be very persistent and very hardy, and to extend the cultivation of wheat to regions where, on account of the low quality of the soil and the severity of the climate, it is at present impossible to produce it.

The study of this and other wild types of our cereals does not confine itself to a merely botanical and historical end, but becomes intensely practical as an economic, even social problem, as its ultimate aim is to produce a little more bread at a little less expense, and to render this production possible where, up to the present time, it has been impossible.

GOOD ROADS REDUCE DISTANCE.

The good road moves the remotest farm right next to the market. A farm twenty miles from the market on an all-the-year-round good road is nearer market than a farm seven miles away on a bad road.

In the Dakotas and Minnesota and Manitoba they haul their product thirty and forty miles; but they can haul it only when the roads are dry in the early fall; and at that season the price is lowest. The farmer along the good road can command the best price by hauling only when the price is best; and he can also raise the produce that gives biggest net returns. If you would learn why a whole family can live and live well off an acre in Holland and Belgium and France, when a family often fails to live well off a hundred and sixty acres in America, study that table of farm averages in relation to the good roads.

The Armsby Company's cannery at Yuba City, Sutter county, is running later than usual this year.

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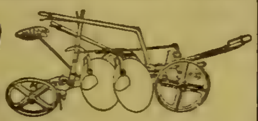

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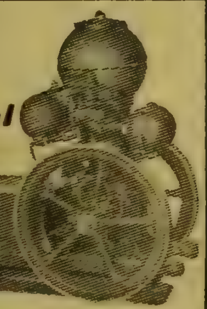

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Will cut tall grass and weeds and do all the trimming along the walks and drives. Your dealer should have them—if he has not drop us a line and we will send circulars and prices.
Clipper Lawn Mower Co
Dixon, Illinois.

The Ornamental Garden

THIS MONTH.

BULB planting time for winter blossoms is here or nearly so, and preparation for the event should be thorough. If the ground devoted to bulb culture has been thoroughly mulched it may now be spaded up and put in the best of tilth. Easter lilies and many others are not yet in the market but the earlier varieties may now be had. Early blooming gladiolus should have been taken from the ground and properly ripened before this time so they may be planted at once. Plant two or three inches deep, and after covering with soil a covering of pulverized manure is valuable. Freesias and some other lilies, if planted now, may possibly give a Christmas growth. Amaryllis belladonna may be divided as soon as the bulbs have had time to rest after blooming. Belladonna Minor finished blooming some time ago and the Major is just now in full bloom in many gardens, but during the month and before the green leaves start, they should be divided.

Golden glow and goldenrod are now in their glory and need plenty of water and a bit of fertilizer to give the largest bloom.

Roses which were deprived of water during August may now be cut back heavily and a fairly strong application of blood meal made and they should be irrigated thoroughly. If this is done Thanksgiving and Christmas bloom will be assured.

Violets may still be started though it is a little late.

Eucalyptus, cypress, acacia and pine seed should now be planted. The blue gum might better be planted later in the month for owing to its strong growing proclivities it might be too large before the spring setting unless transplanted to pots or cans before put into the field.

For fall and winter blooming sow the following annuals; pansies, stocks, cosmos, coreopsis, centaureas, cinneraria, and sweet peas. Other annuals which were sown last month may be potted or put into open ground now.

POPPIES EARLY ANNUALS.

Among the earliest and most satisfactory of our annuals are the poppies, in all their wonderful variations. They are perfectly hardy and germinate freely. Sow them thinly where they are to grow. They should not be closer than three to four inches each way. They last for three weeks or more and can be followed by aster plants, working the beds over and applying a little fertilizer when transplanting the asters, and a little more just before their season of bloom. There are many grand new strains of asters that rival the chrysanthemum, and they are one of our most satisfactory annuals. Seeds should be sown indoors in March, but it is better, where possible, to obtain the plants in season, from the seedsman or florist.

Among the hardy annuals that can be readily grown from seeds are asters, ageratum, alyssum, coreopsis, calendula, candytuft, cosmos, lobelia, mignonette, marigold, nicotiana, pansies, nasturtiums, phlox drummondii, petunias, pinks, salvia, stocks, salpiglossis, sunflowers. Plants of all these can be purchased in season and give more satisfactory results, coming on quickly.

It is best to patronize your local seedsman, who has studied the conditions and requirements of your own section and whose success depends on his painstaking care in listing stocks that are known to be adapted to the soils and climate of his section. For let it be understood that everything will not grow to perfection even in our ideal climate, and we should confine our efforts to those varieties that offer the greatest assurance of success.—Portland Oregonian.

TWO BLADES OF GRASS.

Recently about every one who can spare the time from the illusive race of garnering enough round dollars to meet current expenses has been devoting energy and brain to solving the problem, "Why is it that it costs so much to live?" The Congress grappled with it in very much of a grand stand play—but "High Cost" never batted an eye. The many remedies suggested remind us very much of the countless cures for rheumatism—they work in some cases, but this particular case is different.

Right off the bat salaried people want their wages raised, so that we can pay the increased cost of living. But plainly this would not help the situation ultimately, because if we further increased the cost of manufacture the manufacturer must again raise his prices, and we would be back again to where we started.

A tangible ray of solution has been sprung by Mr. William C. Brown, president of the New York Central Railroad, in a recent issue of The Independent, wherein he suggests that the remedy for the present high cost of living is to get more out of the land. "We have been failing lately in agriculture," says Mr. Brown.

WATERING PLANTS.

Wrong watering.—All plants like to have their leaves sprinkled, but to sprinkle the soil about them as a means of giivng the roots a drink does very little good, and a thorough soaking once a week is infinitely better than a slight daily wetting. When flowers or vines are planted near a house they are in especial danger of suffering from lack of water and should have much more than in other situations. Among the plants which are heavy drinkers are dahlias, heliotrope, forget-me-nots, Japanese iris. Nasturtiums and poppies, both will starve and go thirsty contentedly, only blooming the better.—Harper's Bazar.

Do nothing in an aimless or haphazard manner. No matter how small our grounds or simple our plans, we should always work with the understanding of what we expect to accomplish. Good seeds and plants are not expensive, and only named varieties should be grown, and these marked so that we may profit by our experience.

Nearly every honey producing section of the southern part of the state reports almost total failure of the crop.

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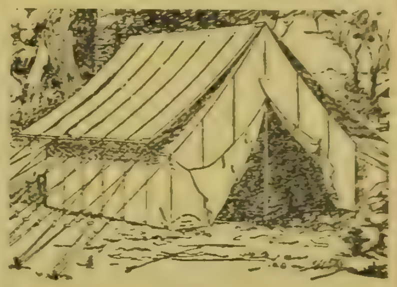

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Protection of Citrus Fruits.

Fruit growers, especially citrus producers, have felt much concern over the remark of Senator Cummins of Iowa in which he expressed himself in favor of a new tariff which he has declared will be the nearest to free trade this country has ever had. He particularly referred to woolens and citrus fruits as subjects for reduction. How correctly Senator Cummins is reported we have no information, but on this question California fruit growers should be alert. The California Fruit Growers Exchange through its manager, Mr. B. A. Woodford, has sent warning to the members of the exchange, and we doubt not this active body will take a hand in any revision which may come within the next few years, but on the basis claimed by even the most progressive of the insurgents we cannot see where a reduction in tariff on citrus fruits could be secured. The claim has been made regarding the Payne-Aldrich tariff that it did not arrange its schedule on the basis of difference in cost of production here and in foreign countries, but if that basis is adopted in future bills there can be no cause for apprehension on the part of citrus growers. Unfortunately the effort of the railroads to take advantage of the increase in the lemon tariff has embarrassed the situation, but if citrus growers continue to make a strong fight, as they have in the past, we believe the present tariff, which is necessary to the best interests of the citrus growers, will prevail.

Good Roads.

But little has been said recently of the eighteen million dollar bond issue which will come before the people at the next election. Presumably the effort to carry it through has been dropped, for its promoters must see the hopelessness of the situation. Especially is this the case since the meeting of the California Good Roads Association which unqualifiedly condemned the move At that time it was shown that through a juggling of the wording of the bill San Francisco county is exempt from interest on the entire issue. As dealers in that city would largely benefit by the issue of the bonds this has been deemed such a rank injustice that voters in other counties will doubtless vote to a man against it. The interest during the fifty years the bonds are to run would amount to more than the bonds themselves. In addition to this there are many other unfortunate features of the bill which should cause those who are looking to best interest of good roads to vote and work against it. The Cultivator is in favor of good roads, and we know our readers will do everything in their power to advance that cause in this state, but the carrying through of this measure would be a mistake.

More Black Scale.

Inspectors and others who have made close examination of the orange groves report a greater prevalence of black scale this year than for sometime. On the other hand the activity of the scutellista, and in some sections of the rhizobius, in destroying scale is very marked. The progressive orchardist who is determined to have clean fruit the coming season is planning for a vigorous campaign with fumigation or spraying, though fumigation is more generally preferred. This is declared to be an excellent season to make a killing of the pest for the reason that the broods have hatched more nearly at one time and earlier than usual. While orchardists have heretofore preferred to begin treatment after the middle of September, this year many have already begun and are securing excellent results.

A Fifty Million Dollar Show.

San Francisco is talking large these days on the subject of the Panama-Pacific Exposition. While New Orleans was struggling to raise its first million and barely succeeding in that, and is now falling back on the state to bond itself to make up the seven millions required by Congress, San Francisco called a meeting and in two hours raised four million dollars. By this time she has seven and a half millions and says "ten million dollars more will be secured at the special session of the legislature called by the Governor for this purpose." She boasts that this will mean the greatest exposition the world has ever seen. San Francisco astonished the world in her power to recover from an awful disaster and there is no reason now why she should not be equally as resourceful in this great work and honor the state and the nation by her effort.

To raise the productivity of our soil 50 per cent would be an increase greater in value than the entire volume of our foreign trade.

Be Patient.

Farmers sometimes look with impatience at the time necessary to accomplish results on scientific investigations. When the scientist takes up the study of a disease or trouble which is confronting the producing class, it would be most desirable if the next day or very soon the answer could be handed back and the entire matter controlled. There have occasionally been cases of this kind which were almost miraculous. In fact, the citrus growers look at the work of G. Harold Powell in giving information as to causes of citrus decay as an example of the kind of results they would always like to secure. There are other cases like that of the Anaheim disease of grapevines which now after a score of years of investigation still baffles scientists. Many deciduous growers are hoping that the investigations of pear thrips will lead to something explicit and if possible, immediate, but this likewise is another case which will take time and intelligent cooperation on the part of the producers to solve. It may be conceded that investigators do not always do all that they should, but there is nothing gained by discrediting their work, and if the Department is willing to put the men into the field, let us assist them by every possible means and await developments.

Spreading.

California is not alone in its desire to unite its fruit growers in co-operative marketing ventures. We are favored with an Eastern exchange which has extended account of a movement by fruit growers of the famous Shenandoah Valley. This is the beautiful valley which was devastated during the Civil War and afterwards came back to its former beauty and a part of its prosperity. Now it desires more of the latter, and to that end has organized the Shenandoah Valley Fruit Growers' Association, Incorporated, which proposes to market its own crops. Success to the new organization.

U. S. Live Stock Sanitary Association.

The annual meeting of the U. S. Live Stock Sanitary Association will be held in Chicago December 5, 6, and 7, 1910. This organization is largely composed of federal and state officials all interested in live stock sanitary work, but it is not an official organization, being a voluntary association for the purpose of securing more effective carrying out of the interests of live stock people. Special attention will be given at the coming meeting to the consideration of bovine tuberculosis.

Orange Way.

Referring to the "Apple Way" proposed by fruit growers in the State of Washington, which is to be in the nature of a state boulevard lined for its entire length with apple trees, the Florida Fruit and Produce News suggests that a similar feature for Florida, excepting that it be an Orange Way, would be a valuable advertising asset.

The State Board of Health makes the statement that typhoid fever is being reduced in this state so that last year there were 2000 less cases of typhoid than in 1906. This means that there were approximately 200 less deaths. The board also figures out that the average cost of sickness from typhoid fever is $300, and that the state is consequently $60,000 ahead because of the efforts at reduction of this dread disease. More and more our communities are realizing the profitableness of sanitation in its results on good health.

"Two hundred and fifty million dollars a year are wasted on bad roads in the United States. Added to loss on haul the storage and extra food rates make the total expense one billion dollars a year. This means a tax of $12.50 on every man, woman, and child in the country. Corners in the grain markets are frequently the direct result of bad roads. In four bad-roads states three hundred and seventy-five thousand people out of seven million cannot read or write; in four good-road states out of six million population there are twenty thousand illiterates."

Agricultural News Notes of the Pacific Coast

Northern California

Knight's Valley, Sonoma county, is finishing hay baling operations.

Yolo county people will hold an agricultural fair at Woodland this fall.

Dry yards working upon pears in Santa Rosa are finishing the season's work.

Raisin buyers in Yolo county have been busy offering four cents for bleached Sultanas.

Sonoma Gravenstein apple producers report slightly less returns than on last year's crop.

Levee District No. 2, Sutter county, is preparing specifications for raising and improving its levees.

Healdsburg proposes to observe a Harvest Festival in celebration of ingathering time of Sonoma county.

Farmers of Napa county are petitioning the supervisors to raise the ounty of $10.00 on coyote scalps to $25.00.

Santa Rosa Grange is urging the change in date of the annual session of the State Grange from October to December.

The proposition of deepening Sui un Slough at a cost of $3000 is be ng discussed by the Board of Trade f Suisun.

An expert of the Department of griculture, is in Sonoma county to nvestigate the ravages of hops by ed spider.

The management of the State Fair eports a more lively interest on the art of exhibitors than in any pre eding fair.

Vacaville, Solano county, reports he shipping of approximately 800 ars of fruit, or about 100 more than ast year at this date.

The beginnings of what is said to e the greatest irrigation project on e Pacific Coast are evident in Lake, olo and Solano counties.

The Western Pacific depot at Oro lle has received from the Chamber Commerce an exhibit of fruits and ner Butte county products.

A mass meeting is in session in ebastopol today to discuss the mat r of incorporating the Sebastopol ravenstein Apple Association.

Sonoma county hop pickers have und that extra care in picking so as have hops as clean as possible has ded materially to quoted prices.

One commission firm in San Fran sco offered the management of the bastopol-Gravenstein Apple Show 0,000 for the entire bunch of fruit hibited.

A fruit grower who has inspected une growing conditions in the Biggs d Dredgerville sections of Butte unty reports that the crop will be rger than anticipated.

Sacramento and Yolo county horti ltural inspectors and the fruit owers are uniting in a persistent ht, which it is hoped will be effect , against pear blight.

Humboldt county creameries paid butterfat for the first fifteen days August: Capital, 34½; Libby, Mc ll & Libby, 35¼; Grizzly Bluff, 34; meer, 31½; Swift & Co., 35½.

Central California

Thompson Seedless raisins are commanding 3¼ cents.

Kings county has 12,000 acres of muscat raisin vineyard.

Lindsay shipped 113 cars of green fruits during the last month.

Poplar, Tulare county, had a field fire last week destroying much standing grain.

The Department of Agriculture has two cars for precooling of fruit installed at Lodi.

One of the finest herds of Holsteins in the state is said to be at Porterville, Tulare county.

Raisin buyers are exhibiting anxiety to secure raisins and it is much easier to deal with them.

Peach growers at Kerman have sold peaches to the California Canners Association at $17.50 per ton.

Dry fruit packers are offering to purchase all exhibits of dried fruit made at the Fresno county fair.

Santa Clara Valley expects a visit from Dr. Howard, Chief of the Bureau of Entomology, next month.

A Santa Clara Valley pumpkin grower has raised a sample pumpkin this year which weighs 265 pounds.

The annual State Fruit Growers Convention will be held this year in Stockton sometime early in December.

The packing of dried peaches is practically finished at Wasco. Green grape shipments are now going forward.

Dried fruit buyers at San Jose are manifesting a keener desire for peaches, and from 4¼ to 4½ is freely offered.

Fresh Thompson Seedless shipped from Fresno are topping the market in fresh shipments now, often running to $1500.

One company at Hanford is sending out several cars of dried fruit daily, principally peaches; apricots are practically cleaned up.

County Horticultural Commissioner Morris of Santa Clara county is urging upon orchardists a persistent fight against pear thrips.

A live stock and farming company has been formed at Turlock and the company proposes to stock a large ranch with O. I. C. and Mulefoot hogs.

The grain industry in the Alpaugh section, Tulare county, is a great factor, often as much as eight cars of grain being forwarded daily. Some ranches have reported as much as 40 sacks to the acre.

There is contention between raisin growers and the California Dried Fruit Agency. Payments have not been made as promptly as possible and growers declare contract has been violated and they will not deliver this year's fruit.

Wine makers are offering grape producers in San Joaquin county to contract for their crops for from five to ten years at a price reported as $8.50 per ton. Some claim that independent buyers will make similar contracts for $10.00 per ton.

Southern California

Southern California bean growers met at Oxnard last Saturday.

Beaumont, San Bernardino county, is shipping largely of apples.

A farmers institute was held at Mound, Ventura county, last week.

The Ricland Walnut Association has ordered 8500 sacks for this years' output.

A Santa Barbara walnut grower claims he has a sure cure for walnut blight.

Valencias have shown an unfortunate greenness in nearly all orchards this season.

Mentone, San Bernardino county, is growing beans the pods of which are two feet long.

One rancher at San Jacinto, Riverside county, is harvesting 125 acres of Blackeye beans.

An effort is being made to secure a viticultural experiment station in the Imperial Valley.

Lancaster, Los Angeles county, is arranging for a farmer's institute to be held September 28, 29.

Hemet, Riverside county, claims to have a better honey output than any other section of the state.

A beet sugar manufacturer says that 56 per cent of the sugar used in Southern California is beet sugar.

The directors of the Richland Walnut Association report a crop shortage, approximating 75 per cent of last year's crop.

Redlands proposes to have an orange clearing house through which accounts of growers and shippers may all be audited.

The Rialto Orange Co. has paid growers for the second June pool on Sweets $1.94. The St. Michael pool averaged $1.71.

The California Fruit Growers Exchange has issued a circular giving information as to an effort to reduce tariff on citrus fruits.

Buyers of dried apricots in Ventura last week offered 10⅝ cents. A few growers sold at that. Others are holding for 12 cents a pound.

Imperial Valley irrigators are still working along the line of the formation of an irrigation district to take over the holdings of the C. D. Company.

Settlers on the Yuma Reservation in northeastern Imperial county are discussing the matter of erecting a schoolhouse for which bonds will be issued.

The call for increased work and investigation on the part of the Southern California Pathological Laboratory is greater than ever and some have declared its services invaluable to Southern California.

The bulk of the dried apricot crop of Orange county has passed into the hands of the buyers at 10 cents a pound. A little went for less. Some growers are holding for more, as high as 15 cents. The membership of the Orange County Dried Fruit Association has started on its second hundred. There were about fifteen original signers.

The Coast

Threshing is finished earlier than usual at Dayton, Wash.

The cannery at Toppenish, Washington, started August 20th.

Fruit is supplanting the timber industry at Bristol, Washington.

Hay at Ellensburg, Washington, is commanding $20 to $21 per ton.

The use of cover crops is becoming general in the Hawaiian Islands.

Great Falls, Montana, has sold over two million pounds of wool this season.

A wool grower at Great Falls, Montana, sold his 7000 pound clip at 16¾.

Fruit growers at Green Bluff, Washington, have formed a marketing organization.

There will be over 1200 cars of prunes in the Boise and Payette Valleys in Idaho.

The Yakima peach crop is proving lighter than expected, but more than double that of last year.

A drainage system costing $250,000 is being installed in the reservation near Wapito, Washington.

Government crop reports place Arizona at the head of the list in percentage of normal citrus crop.

Weiser, Idaho, shipped its first car of prunes August 20th. That section will have an output of 20 cars.

River boats to handle the grain output along the Columbia will be put in commission about October 1st.

The little town of Cottonwood, Idaho, has sent out during the last twelve months over 500 cars of cattle.

Every available water power site along the Snake River in Idaho from St. Anthony to Lewiston, has been filed upon.

Park county, Montana, reports exceptional crops on dry farming lands, some ranches reporting wheat yielding 45 to 50 bushels.

Fruit growers at Green Bluff, Washington, have perfected a co-operative organization to have charge of marketing their fruits.

Prune pickers beginning work in one orchard near Walla Walla, Washington, picked seventeen trees which averaged $18 return per tree.

A dry farmer at Dayton, Washington, certifies to a yield of wheat averaging 63 bushels per acre and running 64 pounds to the bushel.

New crop wheat being delivered at Douglas, Washington, nearly all tests as Number 1. There are now stored in the warehouse 287,000 bushels.

The drouth in Eastern Washington which has been the principal cause of the great forest fires has also done fearful damage to nearly all crops.

Arrangements are being made by the state agricultural college at Pullman, Washington, for the largest series of farm demonstration trains and work ever undertaken.

Representative grain growers near Pendelton, Oregon, have formed a district organization and made arrangements to secure grain quotations daily from market centers.

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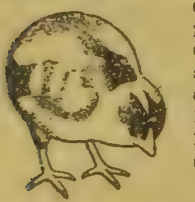

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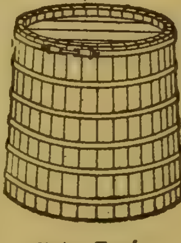

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Profit in the Poultry Yard

SOME MOLTING POINTS.

IT is surprising to an old poultryman to be asked why hens lose most of their feathers soon after midsummer. Yet that is the question coming from a poultry raiser in Missouri. Still this querist is no more ignorant of some common matters than many who pretend to know it all. I recently visited a man who has raised poultry about 15 years, and he told me that he had lost about 20 hens the past month, and he believed the cause of their death was salt. He had seen in a "secrets" book that salt promoted laying, and also prevented early molting, so he had tried it, with the result stated. He will know better hereafter, but without a doubt hundreds have been misled into sustaining the same loss. When I visited him he was mixing some kind of "appetizer" with his poultry food. I asked him what it was composed of and he said he did not know, but it was said to be mighty good for fowls. Did he show any more wisdom than the party asking why hens lost most of their feathers after midsummer?

I notice that there is a good deal of ignorance displayed about the management of fowls when they are molting. Many poultry raisers are fond of declaring that they never have a molting fowl. That they dispose of every hen just as soon as she begins to molt. That is the chatter of the "smart." I have been in the poultry business 30 years, and can prove that I have made more money from plain poultry than any ten "smarts" that ever lived, and I have made a good deal of it from molted hens. In every flock of 50 hens it is possible to find a full dozen or more that are each worth five to ten ordinary pullets. I have had hundreds of hens that up to the end of their second and third business year were high-class money makers, both as layers, incubators and brooders. I have had single hens that made me as high as $20 their second year. They were not fancy stock, but plain, business market stock, and their eggs and the chicks they hatched were sold in the open market. I am well aware that there are plenty of wiseacre poultry raisers standing on one foot to question this statement. But there are lots more who understand the possibilities of a thoroughly well managed hen who are just as ready to accept it without question, because they know there is nothing extraordinary about it.

To carry a hen over in good shape, get her through the molt and at business again of course requires sensible management. If properly fed she will continue to lay all right until most of her feathers are off, but as soon as the new ones begin to grow it is practically a physical impossibility for her to produce eggs, because the very material that enters into the formation of eggs goes to produce feathers, and her system is unable to supply more than what is required for either purpose at one time.

When a hen begins to grow a new outfit of feathers, and ceases to lay, most poultry keepers think it is not worth while to waste any feed on them, and that is right where they miss it badly. Just at the time the hen needs quite as good feeding as when she is laying to enable her to quickly produce her new coat she is about half starved, and the formation of her new plumage is delayed and the molting process is naturally slow and continued into cold weather, often until well on to Christmas. Then, very often she does not begin to lay again until the toplofty prices for fresh eggs have gone glimmering.

In the case of the hen that is supplied with the material required for the manufacture of feathers, she keeps her flesh, strength and vitality unimpaired, and as soon as the coat of feathers is completed she begins to lay, because her system is charged with egg material, and the formation of eggs is a simple change from the formation of feathers. A hen so treated and cared for will, if given a fair show, produce enough eggs to buy herself two or three times over before spring.

But her owner should remember that she should not be loaded down with fat. The food she needs is not such as produces fat, but flesh and bone—a nitrogenous rather than a carbonaceous food, a food that contains a good deal of lime and fills rather than fattens. A small quantity of corn is all right, but bran, middlings, oats and foods of that character should constitute the chief food. I consider the process of forming a new coat of feathers a greater drain upon the vitality of a hen than the process of forming eggs. I have seen hundreds of poor, ragged birds standing shivering in the raw November winds and without a morsel of food in their crops, and their owners were just as keen for dollars as anybody, but they were too stingy to provide their hens with the stuff that makes dollars. Carry your hens through the molt in good shape and they will amply repay you for the food given them. Neglect them or stint them and they will be a dead expense on your hands most of the winter.

Many an amateur has written me that his hens are not laying, though they look fat and fine, and he wants to know what is the matter. Usually he states that he has fed them lots of Thingumbob's egg maker, hen persuader, panacea and other compounds, but is still shy on eggs. Nin times in ten his hens have not full completed the growth of their feathers, and until that is done he will ge no eggs, whether they be hens or pu lets. The aim of the poultry-raise should be to get the crop of feather matured as early as possible; th earlier this is done the earlier the will begin to lay. And once get thei fairly started and it is an easy ma ter to keep them going.

Don't sell off your best hens b cause you have been unable to i duce hens to lay when eggs were good price, but feed and manage the right and you will find them mo profitable than pullets. Now is th time to give them special care. Th better the care the more profitab they will be.—Fred Grundy in Co mercial Poultry.

A horse should fear the whip rath than feel it.

FLIES FOR POULTRY.

The Cultivator recently chronicled the catching and storing of grasshoppers for next season's meat supply for poultry, and now we notice the following in "an exclusive dispatch" in a daily paper sent us by Mr. Geo. H. Ennis of Los Angeles:

"The Ward Line steamer Merida brought here today tne strangest item of cargo that the purser has ever nad upon a manifest. It was a consignment of thirty-eight five-foot bags of dried flies. The flies, many of which are now ground into powder, were shipped by A. G. Vimbert of Santa Cruz to Schroeder & Bros., Hamburg.

BUTTERCUPS ARE AN OLD BREED WITH A NEW NAME.

We quote the following from a writer in the Country Gentleman:

Is the "Buttercup" a new breed? is a question which can be answered with an emphatic No. J. H. Haynes says that Capt. Cephas Dawes brought them to this country in 1877, which would be about a third of a century ago, and, of course, they had to be in existence in Sicily some time previous to that date. The breed probably has existed half a century, perhaps much longer than that.

For some years back a certain Massachusetts breeder has been advertising Buttercups. Long before this breeder's advertisement appeared, the writer bred, advertised and sold the capcombed Sicilian fowl as Sicilians. And years before that, in the columns of the Poultry World, then published by H. H. Stoddard at Hartford, Conn., descriptions of the fowl appeared. That the Buttercup is the same fowl as that bred by the writer, and earlier described in the Poultry World, is obvious from the similarity of the description given by Mr. Haynes with that of the fowl kept by this writer, and that which appeared in the aforesaid poultry journal, as well as from the fact that the Massachusetts breeder referred to advertised his fowls, at least in his earlier advertisements, as "Buttercups or Sicilians." I find that the hens were excellent layers of medium-sized eggs; that in figure and shape they reminded one of both the Leghorn and the Game, not being, perhaps, midway between the two, but still possessing a likeness to or suggestion of both breeds; that the hens are not what I should call fawn, but rather buff, in color, with black and irregular markings; that their principal peculiarity was the character of the comb, nearly round, hollowed out in the center, and forming a cup or crown. If one will take a rose-comb, remove the spike, and dig out the center, one will get a fairly good idea of this comb.

I have had White Leghorn pullets lay when 14 weeks old, and I have never known Sicilians or Buttercups to lay at an earlier age. Such early laying, in any breed, is exceptional and does not fairly indicate the average laying age. Like the Leghorns, too, the Sicilians were fairly prolific layers, but I never knew a Leghorn or Sicilian to lay 300 eggs in one year. I do not deny its possibility, but I always feel when I read of such records that there must be a mistake somewhere. There are so many opportunites for mistakes to occur that such a record as this needs to be strongly fortified by proofs. It really seems to me that I couldn't believe it, if I had told it myself; I certainly couldn't unless I knew all the circumstances, and knew, also, that every chance for mistake had been eliminated.

But if it is the fact, if a Sicilian or Buttercup hen has really laid 300 eggs in one year, we must not forget that it is the record of an individual, but not of the breed. My father once owned a gray gelding that could trot a mile pretty near to 2:30, and so he bought another colt from the same sire and dam, but the second one could not trot a mile in four minutes. The statement of phenomenal performances of individual hens, without any qualifications, is apt to be misleading . If a Buttercup hen has laid 300 eggs in a year, it does not follow that the breed is exceptionally prolific, though I have no doubt, unless it has fallen away in this respect from its former state, that it is a good-laying breed. As a layer it will compare favorably with the Leghorn; at least those I owned did.

To sum up the whole matter, the Sicilian or Buttercup is a smallish fowl, with a cup comb, in appearance reminding one of the Leghorn and the Pit Game, with the markings of the female somewhat irregular, of a maturity and prolificacy similar to those of the Leghorn and with similar faults. It is not, in my opinion, likely to revolutionize poultry keeping or egg-farming, nor to displace other heavy-laying breeds, but it nevertheless is a good layer and "for those who like this sort of a thing it is probably the sort of thing they will like."

LIME.

The lime which goes into the shells of the eggs will not be lacking if the food is varied, as nearly all foods contain lime in some form. Experiments in that direction show that the use of oyster shells does not insure a sufficiency of lime, though oyster shells will serve the purpose to a limited extent if the food does not provide the necessary lime. It is claimed that a hen may be confined on a board floor, allowed only flint gravel for the gizzard, fed plenty of green food with a small allowance of grain and meat, kept warm and comfortable in winter having ample opportunity for scratching in litter of some kind, and she will lay perfect eggs with proper shells, without even the least proportion of oyster shells or lime near by her. The lime will be derived from the food, and in a proper condition so as to be easily digested and assimilated and in a state in which it becomes immediately available as a constituent of the egg. There are hens in some sections that are far from the sources of supply of oyster shells, yet they equal those in other localities as egg producers. Nature prompts the fowls to select the food best adapted for their purpose, and if given a variety they will balance the suppply so necessary for the production of eggs.—Coleman's Rural World.

DESTROYING VERMIN.

A subscriber wants to know how to get rid of lice, mites, etc., in his hen house. This can be easily done if the building is tight, so that by closing doors and windows all fresh air may be excluded and then fumigate with sulphur. If the floor is of wood, place stones or bricks in the middle and on them put a pot in which are live coals, and when all is ready, throw on the coals a pound or two of sulphur and leave the building at once before breathing the fumes. Do this early in the morning as soon as possible after hens are off the roost, and leave the hen house closed till four o'clock, then open and let air before the fowls go on roost. Lice, mites and bedbugs will be dead.—Rural World.

POULTRY MANURE.

It is believed that the following brief summary of information on the preservation and value of poultry manure prepared by F. W. Morse, of the New Hampshire Station, will be of general interest:

As is well known, when the poultry droppings accumulate under the roosts and when they are left in barrels there is a strong odor of ammonia noticeable. The development of such an odor is a sure sign that gaseous ammonia is escaping into the air to be lost for the present. How to prevent such a loss is to prevent the development of the odor. Several chemicals of more or less fertilizing value in themselves may be added to the droppings from time to time with good effect, both in stopping waste and in making the atmosphere of the henhouse more wholesome.

The best materials for this purpose are gypsum or land plaster, acid phosphate, and kainit, a cheap potash salt. Each of these chemicals has the power of forming new compounds with the ammonia as fast as it is set free from the original combination. Wood ashes and slaked lime should never be used, because they can not combine with ammonia while they do force it out of its compounds and take its place.

Plaster is apt to produce a dry, lumpy mixture when used in large enough quantities to arrest the ammonia, while kainit and acid phosphate produce the opposite effect of a moist, sticky mass.

In Bulletin 98 of the Maine Experiment Station is described an experiment in which sawdust was used in addition to the chemicals. By this addition of an absorbent, the kainit and acid phosphate could then be used with excellent results.

Using their results as a basis for calculation, the weekly droppings of a flock of 25 hens, when scraped from the roosting platforms, should be mixed with about 8 pounds of kainit or acid phosphate and a half peck of sawdust. If one desires a balanced fertilizer for corn and other hoed crops, a mixture of equal parts of kainit and acid phosphate could be used instead of either alone.

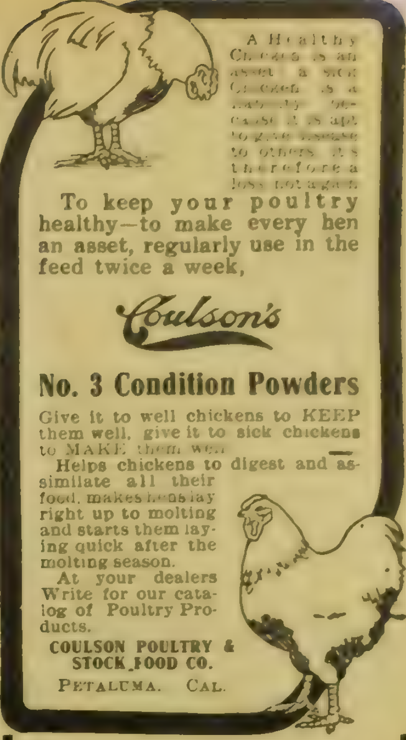
Good dry meadow muck, or peat, would be equally as good as sawdust, if not better, to use as an absorbent.

In the experiment mentioned more than half of the ammonia was lost in hen manure without chemicals, when compared with that which had been mixed with them.

Fresh poultry manure at the present values of fertilizers would be worth 60 cents per hundred pounds. Figures from different experiment stations would give the product of 25 hens for the winter season of six months as 375 pounds from the roost droppings only.

Poultry manure is especially adapted as a top dressing for grass because of its high content of nitrogen in the form of ammonia compounds, which are nearly as quick in their effect as nitrate of soda. A ton of the manure preserved with sawdust and chemicals would be sufficient for an acre, when compared with a chemical formula for top dressing.

On the same basis of comparison, 100 fowls running at large on an acre should in a summer season of six months have added to its fertility the equivalent of at least 200 pounds of sulphate ammonia, 100 pounds of high grade acid phosphate, and 60 pounds of kainit.



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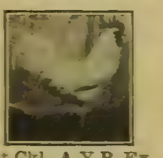

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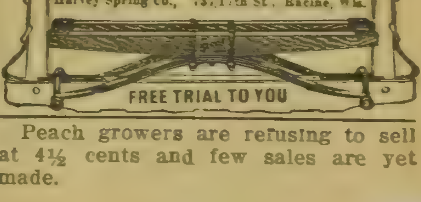
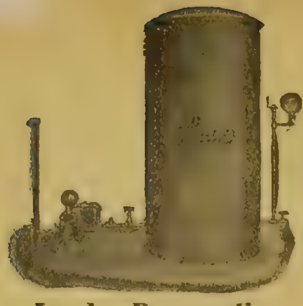
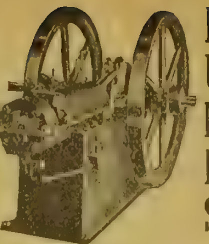
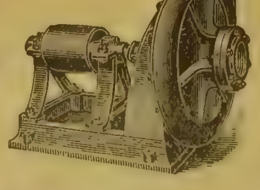


[illegible] Make every wagon a spring wagon [illegible] fruit, vegetables, eggs, etc. [illegible] more money. Ask [illegible]
Harvey Spring Co., 737 17th St., Racine, Wis.

Peach growers are refusing to sell at 4½ cents and few sales are yet made.







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California Farm Names

FARM NAMES.

COVERING a period of several months, a year or more ago, the Cultivator ran several lists of farm names adopted by people all over the State of California. Occasionally now there comes to this office inquiry as to these lists and as to possibility of securing exclusive right to a name in this state. The last legislature passed a law governing trademarks in which the privilege was extended to cover trademarks of names of farms, orchards or packing houses. This law requires payment of a fee of $5.00 in order to secure exclusive right to use of name for any ranch in the state. Anyone wishing to secure this exclusive privilege should write the Secretary of State for blanks and information.

We give below list of names formerly appearing in the Cultivator. There are two in this list which are duplicates, but widely separated as to location. Excepting for that one case, we believe there is no duplication, though other names come remarkably close to each other, for example, "Highland Farm" and "Highland Home." Where the name is not trademarked, it is a safer proposition to coin a word, as will be seen in some cases in the list given. To do this requires some skill to secure a euphonious and pleasing name as well as one appropriate to the ranch.

Should this naming of the farm appeal to others, we would appreciate it if the name be sent in spelled plainly, together with any facts which may be of interest to our readers. Please note that we say "spelled plainly" because in the ordinary running hand a name is easily mistaken. For example in the old list appeared the name "Soywild." This was plainly a mistake though no stranger than some other names chosen. The name should have been written "Ivywild." Therefore, in order to indicate to newcomers who may wish to have names published, we use this one instance to point out the difficulty mentioned.

The following are farm names which have been sent in for publication since the former lists appeared.

Ivywild. Owners, Mr. and Mrs. M. B. Olds and Miss Ella Dillon, Ceres, Stanislaus county. "We have lately purchased this farm of 20 acres. It is three miles east of Ceres and one and a half miles southwest of Hughson. It is under the Turlock Irrigation Ditch. It has 12 acres of alfalfa, also grapes, fig trees, family orchard of all kinds of fruits, grounds about the house supplied with shade and ornamental trees, and a very comfortable six-room house. We are greatly pleased with our new home."

Golden State Ranch. Owner, C. H. Carlson, Hughson, Stanislaus county.

Rancho Mirasol. Owner Carl C. Curtis, Pasadena, Los Angeles, county. This is a beautiful little ranch given over largely to production of white leghorn poultry. It is next to the Sierra Madre foothills, with beautiful view and one of the neatest little bungalows we have ever seen.

Earl Poultry and Fruit Farm. Owner, G. W. Earl, Gilroy, Santa Clara county.

Umbra Oak. Owner, C. V. Wickham, Pasadena, Los Angeles county.

Valley View. Owners, Pickering Company. Manager, L. A. Pickering, Whittier, Los Angeles county.

Morningside. Owner, J. E. Dunn, Gardena, Los Angeles county. There are 80 acres in this valuable ranch which is near the city limits of Los Angeles in the rich alfalfa section of Gardena, and is an exceptionally valuable property.

Orion Place. Owners, Mr. and Mrs. Bird Thomas, San Gabriel, Los Angeles county. This cosy ranch home is fifteen miles from the city of Los Angeles just off the Duarte Road on the great Baldwin Ranch. From the place is a wonderful view of mountain and valley, and it is indeed an ideal home spot. There are ten acres planted to fruits. The name is taken from Mr. Thomas' given name, and also means star or constellation of stars. Mrs. Thomas writes, "We hope to make it a star place soon."

Florence Villa. Owner, G. D. Tofanelli. Mr. Tofanelli writes: "The name of the ranch is Florence Villa. I came from that city and my business is making olive oil and pickled olives. You know that Florence is the capital of Tuscany, Italy, where the olive trees, and in consequence the olive oil, are the best known in the world, so that I wish to give to my ranch the same name because I manufacture fine olive oil the same as that of Florence, Italy."

Star Wano Ranch. Owner George M. Needham, Rumsey, Yolo county. Mr. Needham writes that his ranch consists of 20 acres on which he has 1200 trees consisting of almonds, peaches, apricots, pears and oranges, also some hay land, pasture and a garden, all of which are irrigated from well belonging to Mr. Needham. The water is raised by a gasoline engine, and stored in round cement tank.

Names formerly published in the Cultivator are given below:

Farm Names.

Acacia Farm, C. B. Marks, Dos Palos.

Alberta Orange Grove, A. E. Rudell, Rialto.

Alfadena, L. E. Dahling, Yuba City.

Alpha Dune Ranch, J. J. Smith, Brooks.

Alta Vista Ranch, L. F. Sternman, Wrights.

Anchorage, Capt. and Mrs. Oscar Kustel, Ontario.

Arbor Ville Ranch, W. H. Condart, Holtville.

Argyle Orchard and Farm, Robert Adams, Beaumont.

Bellflower Ranch, Mr. and Mrs. E. G. Nelson, Chino.

Belle View Ranch, M. C. Kelly, San Dimas.

Black Mountain Ranch, Warriner and Son, La Mesa.

Calazona Ranch, F. S. Webster, El Centro.

Canyada Verde, A. M. Otis, Whittier

Carson Heights, Mr. and Mrs. Fred E. Judson, San Pasqual.

Central Grapery, J. L. Winniger, Compton.

Cypress Avenue Fruit Vale, Mr. and Mrs. D. S. Conyer, Los Alamos.

Deveron Grove, E. S. Ingram, Pomona.

Dogwood Ranch, Arthur S. Fell, El Centro.

Dos Alisos, G. S. Storrs, Duarte.

Dunwoodie, James Scott, Los Banos

Early Vale Orchard, H. Kettenburg, Winters.

Edgeland Acres, Edgar S. Miller, Elk Grove.

El Alamo, C. H. Francis, Loomis.

El Guernsey Rancho, E. G. Webb, Fresno.

El Modello, Charles F. Collins, Dinuba.

El Verde, Mr. and Mrs. Fred J. Smith, Pomona.

Enterprise Jersey Farm and Nurseries, Tribble Brothers, Elk Grove.

Far View Berry Ranch, J. S. Bates, Highland.

Forest Oaks Ranch, A. E. Bennett, Tustin.

Glendell Grove, Monroe Miller, Lakeside.

Green Mountain Farm, G. S. Trauzettel, Ukiah.

Greenwood Ranch, C. E. Garrett, Hynes.

Hazlecroft, Mr. and Mrs. H. J. Painter, Glendora.

Palma Vista, John A. Whetstone, Escondido.

Palmetto Orange Ranch, Mr. and Mrs. C. R. Rice, Lindsay.

Palomitas Vineyard, Mr. and Mrs. W. N. Sherman, Fresno.

Paulheim Ranch, E. V. D. Paul, Ukiah.

Paradise Ranch, C. H. Carlson, Hughson.

Paramont Ranch, J. H. Miller and Sons, Ritchey.

Quail Hollow, William Richards, Eddles.

Rancho de la Rosa, Mr. and Mrs. C. A. Rose, Le Grande.

Rancho de Martinez, Thomas R. Hanna, Martinez.

Rancho Kielyenso, Wm. Kiely, Lawrence.

Rancho Santo Antonio, A. J. A. Frietas, Hanford.

Rosehill Bee Farm, August Soderquist, Turlock.

Roselawn, John F. Digmun, Norwalk.

Shady Oaks,. S. D. Phillips, Bachelor.

Entrance to a Porterville Orange Grove.

Highland Farm, H. R. Ives, El Cajon Valley.

Highland Home, John Carlson, Selma.

Home Orchards, Frank Femmons, Ahwahnee.

Indian Hillock, J. T. Law, Loomis.

Kanova Ranch, Mrs. P. J. O'Mealey, Miss Bee Josephine O'Mealey, Mr. J. S. C. Richardson, Anderson.

Keystone Ranch, Dr. and Mrs. W. N. Sherman, Fresno.

Kiwelattah Farm, David Wood, Arcata.

Lemora, L. G. Joslin, Chula Vista.

Linda Vista, J. W. Mills, Marysville.

Lindoford, Mr. and Mrs. N. Woodford, Chico.

Locust Farm, H. P. Brown, Bakersfield.

Loma de Luz Orchard, O. M. Prickett, Alma.

Maygrove Ranch, A. T. Kenyon, Charter Oak.

Medawin Ranch, E. W. Blakeman, Holtville.

Merlin Villa, Mrs. J. Lenert, Chino.

Minnetonka, Chauncey S. Sheldon, Lordsburg.

Minnewawa Vineyard, Dr. and Mrs. W. N. Sherman, Fresno.

Mistletoe Ranch, B. Howard Whitcomb, Holtville.

Moen Ranch, E. O. Eggin, Hemet.

Mountain View Ranch, Roy E. Swigart, Macdoel.

Myrtlehurst, Mrs. Alfred J. McClatchie, Montebello.

Muscatel Orchard, Mrs. J. B. Leininger, Fresno.

Nuthurst, J. F. Unruh, El Monte.

Orange Crest Ranch, Mr. and Mrs. F. A. Thornton, Camanche.

Shasta View, J. H. Walker, Olinda.

Spring Vale, Frank Tunnell, Los Olivos.

Steladelma, G. W. Scott, Madison.

Sunnyside Ranch, P. N. Warner, Sanger.

Tanglewood Farm, Mr. and Mrs. J. H. Goodier, Corning.

Tereticornis Rancho, Rev. L. D. Temple, Hemet.

Teson Rancho, A. S. Bradford, Placentia.

The Four Waters, Captain H. Anlauf, Santa Paula.

The Gables, Frank Mead, Sutterville Heights.

The Louisiana, F. A. Louis, Lankershim.

The Love Ranch, D. C. Love, Fillmore.

The Nutshell, Mrs. Mary A. Powell, Elk Grove.

The Oaks, C. E. Moore, Yuba City.

The Oaks, F. M. Leasure, Tulare county.

The Orange Hague, P. Ting, Plano.

The Poplars, D. D. Palmer, Modesto.

The Swastika Ranch, H. C. Porter, Alpaugh.

The Virginia, Joseph Clarke, Redlands.

Villa Alois, A. Podrasnik, Uplands.

Vineclad Farm, Geo. D. Lee, Compton.

Vista Grande, C. Le Roy Kennedy, Mountain View.

White Cliff Fruit and Vegetable Farm, W. A. Mayo, Ventura.

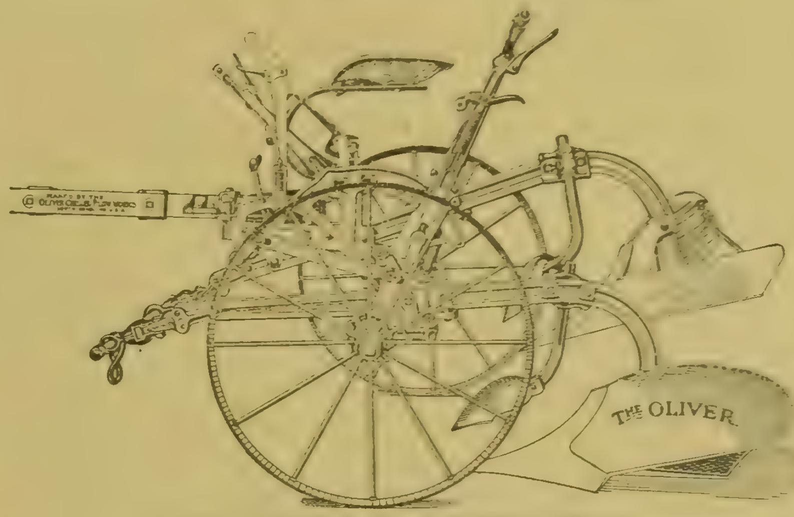
Wildoe-Astoria Villa, J. K. Wilson and G. Thornton Doelle, Nestor.

Willow Dairy, S. S. Farnsworth, Tulare.

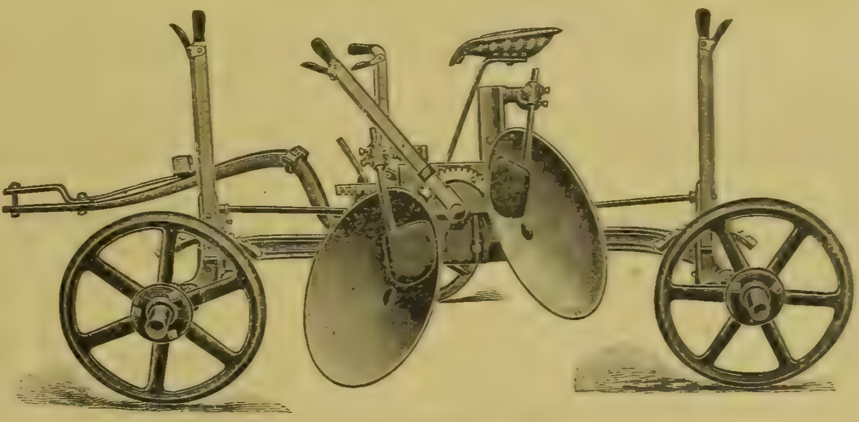
Woodside Ranch, H. D. Williamson, Santee.

Reversible Plows
For Plowing Side Hills and Level Land

No. 508-Oliver Walking Plow



No. 23-Oliver Sulky Plow



Sunshine Disc Plow

Our Plows are guaranteed to plow perfectly and leave the land without water furrows. Send for full description and prices.

Newell Mathews Company
200 North Los Angeles St., Los Angeles, Cal.

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We Sell More Second Hand
Engines Pipe Fittings
Pumps Boilers, Etc.
than all other concerns of this kind on the coast. Write me for prices, etc. We have no agents or subsidiary concerns. I treat you square.

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650 to 660 Brannan St., San Francisco, Cal.
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Fumigating Tents, Lemon Curing Tents and Irrigating Hose our Specialties
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Sunset Main 3500
305-7-9 East 4th St., Los Angeles

Queries and Replies

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Pickling Olives.

Please give formula for pickling olives.—M. F., Orland.

The Cultivator now has in manuscript ready for the paper an excellent article on olive curing written by Mrs. Minna E. Sherman. This will appear in the Cultivator in the next two or three weeks in abundant time for this season's pickling.

Renewing Alfalfa.

Can I thicken a new seeding of alfalfa which has pig-weed and tumble-weeds in it, and when would be best time to sow? Is it wise to disk oats in a late stand of alfalfa the last of November? Would it injure the alfalfa? If not, how many bushels of oats should I sow to the acre?—P. R. J., Pomona.

The new seeding of alfalfa we would give a thorough disking well towards spring, seeding also with clean alfalfa seed. The disking will aid in the stooling out of the roots now in ground, providing the disks are set so as to cut very straight. We would not put oats in on the later sown alfalfa, but treat that in the same way, that is, disking and seeding with clean alfalfa seed. In your section, especially if the land is not irrigated, it might be wise to do this in November rather than wait until spring. As to sowing with oats, we believe the benefit would be more than overcome by the loss, but should you wish to do so, you can sow say, two bushels of seed to the acre.

Bees in Tank House.

How can I get rid of bees that have been in tank house for more than a year? Have tried to kill them with poisoned honey; have smoked them with sulphur smoke, but they still remain; have filled up all holes and they still get in.—A. B., Redlands.

This is quite a question and one for which there is no explict answer. If any of our subscribers have had experience and have succeeded, we will appreciate suggestions. The subscriber says that he has stopped all the holes, and it seems that would be sufficient. We have heard of similar cases where crude black oil was used, being smeared over the entrance, but in this case we cannot see that this would succeed.

Yellowing Oranges.

I note that Valencia growers sometimes sweat their oranges to secure return of orange color. Mine have turned green. How can I secure more desirable color?—Subscriber, Oroville.

The oldest and probably the simplest method is to put the oranges in a heap, turn the hose on and thoroughly wet the whole pile, then cover with heavy canvas and leave for a couple of weeks. This is also the most satisfactory way if time is not a factor. The natural heat generated colors them and the stems do not drop out as is the case with artificial sweating. Artificially they are colored more quickly by placing in a tight room and raising the temperature by use of oil or gasoline stoves over which cans of water are placed. By this means the room is quickly raised to a temperature of, say, 95 degrees, and held there for a few days when the color will be satisfactory, but, as noted, many of the stems will drop out, causing a lowering of grade of fruit.

Storing Sweet Potatoes.

Will sweet potatoes packed in sawdust or shavings keep over winter? Would they influence flavor of the potatoes?—Robert Werner, Loma Linda.

Any method which will keep your potatoes at a uniformly cool temperature and dry is good. Some leave in the ground, when it is a dry, sandy soil, until needed. We would prefer use of dry sand to shavings or sawdust. They probably would contain more moisture and be more inclined to heat than would sand. In any case we would not dare to use shavings of a piney or pitchy nature because of possible effect on flavor of potatoes. Of course cold storage is best. If the idea is to store for better prices we believe we would prefer marketing at once for the loss is usually large.

Cover Crop.

What is the best cover crop to plant in young Muir peach orchard? Do you consider cover crop as good a fertilizer as sheep manure?—Subscriber, Porterville.

The best information on cover crops to which we can refer you is the issue of the Cultivator of September 9, 1909, but in a word, the best leguminous crop which will give the greatest tonnage in your section is the one to use. Vetch is generally favored in the orange orchards, but in your section if burr clover will give a much heavier crop we would choose that. No cover crop will give as good or as quick results as will sheep manure; cost is the factor which decides in favor of cover crops. The manure would carry not only nitrogen, but potash and phosphoric acid into the soil, while the cover crop, except as it appropriates the nitrogen of the soil air, only makes available what is in the soil, and improves its mechanical condition.

Paspalum Grass.

Is anyone in California growing Paspalum dilatatum, and with what success? Also is Arabian alfalfa successful in this climate, and is it preferred to the Chilean?—Subscriber, Tipton.

Paspalum has been tested at the experiment grounds at Berkeley and we think also at the grounds at Tulare. By writing the director of the state experiment grounds at Berkeley you can secure definite information. In a general way we may say that it has not proven of exceptional worth here; in Australia and under moist conditions it has proven remarkably profitable.

Arabian alfalfa has been tested too short a time to show its permanent value. It makes a very high grade of hay; its growth is exceedingly rapid and many claim it gives an extra cutting, or even more, per year over the Chilean. The same bulk of Chilean will weigh heavier than Arabian. Others have found it short-lived and in need of re-seeding after two or three years.

Soap Without Boiling.

Please give me recipe for makin soap without boiling.—Mrs. H., Waukena.

We are unable to find such a recipe and ask help from subscribers.

Nitroculture.

Please give information regarding inoculating seed with nitrocultures. Also how is seed treated with blue stone to prevent rust or smut? Wheat and oats are so treated in Canada.—L. E. A., Hemet.

See article on page 187 of the Cultivator of August 5th, 1909, also on page 402 of issue of October 21st 1909. In a word we may say that the best plan is to secure soil from an alfalfa field already inoculated and growing well. A barrel of soil will be enough for 100 pounds of seed. Have soil slightly moist and mix with seed. A slight sprinkling as the material is shoveled over is advisable. Keep out of strong sunlight, sow and harrow in as quickly as possible. Instructions for use of commercial nitroculture will be found on the package.

For treating wheat and oat seed for rust two dips have been recommended, both almost perfect in their action if care is taken. The oldest is corrosive sublimate 2 ounces and water 15 gallons. The other is formalin, 1 ounce, water 2 gallons. Immerse for 30 minutes. Blue stone is also used.

Silkworm Culture.

Can you give me any information as to silkworm culture? Can it be made profitable in this section? Where may I secure worms for a start?—Subscriber, Lodi.

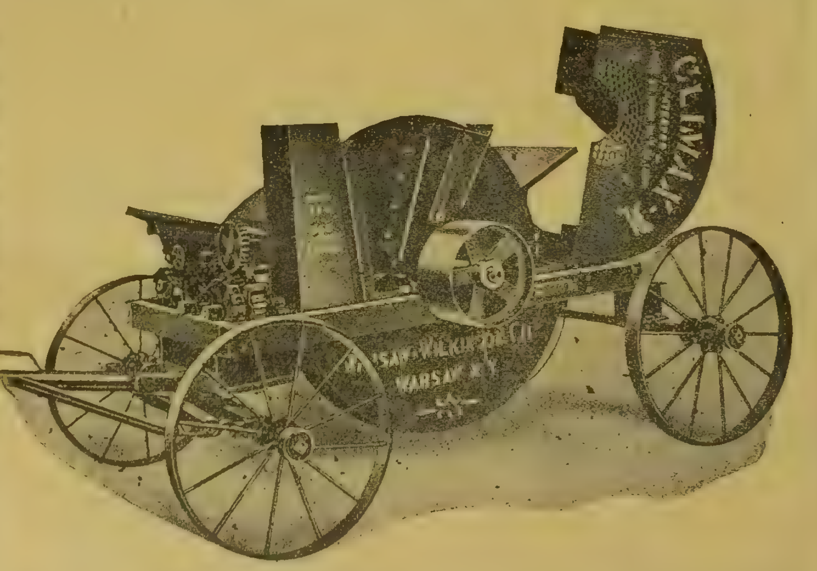
We believe there has been no example of success in sericulture in California, at least on a commercial basis. There have been one or two small plants which as a novelty in tourist towns have proved satisfactory. It has been claimed that as a commercial proposition labor is altogether too high to permit of the success of the industry. The mulberry grows here to perfection and leaves may be had in practically every month of the year so that in theory this seems to be a favorable location. The time may come when there will be a better opening.

FARMER'S CONGRESS.

The thirtieth annual session of the Farmers' National Congress, opens in Lincoln, Neb., October 6. The governor of the state is much interested and will tender a reception to the delegates. Hon. W. J. Bryan will deliver an address. The delegates will visit the Beatrice creamery, the largest in the world, located in Lincoln. George M. Whitaker is secretary, 1404 Harvard street, N. W., Washington, D. C.

R. R. Snowden the soil expert has a change in his advertisement in this issue. Look it up, and write him for terms, etc.

Climax Ensilage Cutters



In the Climax Pneumatic Ensilage Cutter both the cutting and elevating are done by a large wheel which carries the knives on one side and the elevating fans on the other. Both the cutting and elevating, therefore, are done at one operation, in much simpler manner and with an expenditure of much less power than in those machines where the elevating device is a fan attachment added to the cutter.

The convenience of having an ensilage cutter of large capacity on its own road wheels is obvious. We confidently assert that no other ensilage cutter is so easy to work and easy to move and set up as ours, or has such large capacity for power used. They are unequaled in simplicity, strength, durability, convenience and safety in operation, and the excellent quality and uniformity of the silage. We received at the

St. Louis Fair the Only Award

for ensilage cutters of the side-wheel type, 5 to 50 tons of green corn per hour, where cut in one-half lengths, other feed in proportion. For further particulars, call on or address

O. J. Weber Co. 225-227-229 East Sixth Street
Los Angeles, Cal.

Vetch

A few tons of imported German seed remaining in warehouse at Los Angeles, also at Redlands. Will make close price to clean up.

Redlands Fruit Association
Redlands, Cal.

Veterinary

Answers in this column by Dr. R. T. Whittlesey, are without charge. For immediate mail answer remit $1.00. In writing questions give full symptoms or particulars of injury of animal.

Warts.

My horse has a big brown wart on side of his jaw above the corner of his mouth. It first appeared as an ordinary wart but has spread to two inches in diameter.—W. R., Calistoga.

The best way to treat this is to cut it out, a very simple operation. Then treat with a solution of sulphate of copper and water. It should heal in a few weeks. If you cannot have this done, use the following: Mix a little dry arsenic with twice its bulk of flour; scrape the surface of the wart until raw, then rub the mixture into the surface and tie the horse so he can not rub against the stall. It will dry up and in a week or ten days fall out leaving a hole which should be treated with the copper solution. If the first application does not take out all the wart, repeat, but do not forget at any time that you are handling arsenic.—R. T. W.

DR. WHITTLESEY'S VETERINARY REMEDIES.

These are not ordinary mixtures but are from well tried formulas, used in an extensive practice in Southern California for nearly a quarter of a century. Dr. Whittlesey's Sulphur Arsenical Salve for deep fistulous or ordinary chronic, indolent sores such as. "Poll Evil," "Fistulas," "Quitters," "Thrush," "Scratches," "Warts," "Collar Sores" or "Sit-fasts," $1.00 per package postpaid. Printed directions. Dr. Whittlesey's Antiseptic Healing Powder forms a coating over raw surfaces, excludes air, flies and floating germs. Makes a cheap and convenient dressing for the many sores that occur to stock on the ranch. $1 full pound can postpaid.

DR. R. T. WHITTLESEY,
Veterinary Hospital, 714 East Seventh St., Los Angeles, Cal.

OUTPUT OF APPLES.

Dr. Berneike of Santa Ana calls our attention to the estimates of the coming apple crop given in last week's issue by the Secretary of the International Apple Shippers Association. This estimate divides the country up into groups showing a production this year ranging from 15 to 300 per cent of normal crop and of a quality ranging all the way from poor to good. Most of the estimates were, however from 100 to 300 per cent of normal, while the Crop Reporter gives the conditions on July 1st as averaging the country over 49.6 per cent. Last year at same date the Reporter gave the condition as 54.6 per cent; 1908, 57.6; ten year average, 69.9. There is no effort in the quotations from the Shippers' Secretary to give the average the country over, but a glance at the conditions in the various states would lead one to think the apple output this year is excessive. We presume the output in the Pacific Coast states this year will be materially increased over last, but sure it is reports from private sources over the Middle West and in many Eastern sections, indicate almost a complete failure of the crop.

APRICOTS ADVANCE.

The Orange County Dried Fruit Association announces that beginning today—Sept. 1—the minimum price on dried cots of the association will be 11 cents.

"Corrections and improvements in government, as in all things, may not be done at once, but only patiently and gradually, and - - - charitably, explaining and teaching as you go."—Mayor Gaynor.

Money Making Little Liners

In this department we will insert your advertisement under a classified head for 1½ cents per word per issue. No ad accepted for less than 25 cents. Our classified columns are the clearing house for our many thousand readers.

MACHINERY.

For Sale—Second-hand windmills, tanks, engines and farm machinery that will do the same work as new at half price. Domestic and irrigating windmills and tanks. 2000-gal. tanks at $18.50 or $20, f. o. b.; 2-H. P. Fairbanks, 4-H. P., 6-H. P. Fairbanks, 9-H. P. Moore, 10-H. P. Lambert, 20-H. P. Fairbanks like new; 25 H. P. engine and mining hoist; 2-H. P. steam boiler and engine, also complete wood sawing outfit, mounted on iron trucks with a 9-H. P. engine, complete for $225. Farm and light express wagons, surrey $35, baler, header; gang, disc, road, riding, and walking plows; weeder, cultivator, feed rack, wagons, tanks, fruit crusher, bone grinder, wheelbarrows, pipe, Fresno and Slip scrapers. Most anything a rancher wants second-hand. Demmitt Co., upstairs, 120 N. Main St., Los Angeles, Cal.

For Sale—Gasoline Engines of all sizes. New Alamos, none better on the market. We also have a good stock of second-hand engines taken in exchange and we guarantee these like new and still save you money. An investigation will pay and convince you. Bailie & Brandt Company, 943 and 945 N. Main St., Los Angeles, Cal.

For Sale—11-H.P. Distillate Engine. Used a short time; priced accordingly. In perfect condition. Our guarantees goes with it. Machinery Exchange, Main and Bruno Sts., Los Angeles, Cal.

TREES.

Fine Large Eureka Lemon and Valencia Orange trees, fine for replanting. Choice lot of fine Washington Navels. Order quickly. They are going. Home 'phone 1731. John R. King, Whittier, Cal.

Fruit Trees—Get our advance prices. Choice 4-inch pot roses, 15c. Our tree specials won't last long. Get wise. Ballou's Nursery, Pasadena, Cal.

Marsh Seedless Grapefruit—600 large trees for sale. E. S. Thacher, Nordhoff, Cal.

For First-Class Valencia and Navel Orange trees and Eureka lemons, see A. G. Snow, Oxnard, Cal.

Wanted—Contracts for citrus trees in large amounts, 10,000 or more. O. E. Hyde, Nurseryman, 72 Mary St., Pasadena, Cal.

HORTICULTURAL PRINTING.

The Kruckeberg Press, 123 South Los Angeles St., Los Angeles, Cal., makes a specialty of Horticultural Printing and Engraving. Cuts and illustrations of all standard, economic and ornamental plants on hand and subject to the use of patrons without cost. Samples and estimates cheerfully furnished. Remember, we design, write, engrave, bind and print; in brief, do the "whole thing," at no additional expense to the customer. Correspondence a pleasure.

POULTRY SHOW DATES.

Sacramento, September 3-10, 1910. Annual Poultry Show held in connection with the State Fair. E. F. Mitchell, Director, Sacramento.

North Yakima, Washington, Sept. 26-Oct. 1, 1910. Washington State Fair. John W. Pace, Secretary, Harry H. Collier, Superintendent.

Stockton, Cal., Nov. 8-12, 1910. First Annual Exhibition of the San Joaquin County Poultry Association. Eugene P. Sabin, Secretary, Stockton.

Aakland, California, Nov. 22-27, 1910. Annual Exhibition of the Alameda County Poultry Association. E. K. Healey, Secretary, Alameda, Cal. tary.

Seattle, Wash., Dec. 5-10, 1910. F. E. Barth, Secretary.

Portland, Oregon, Dec. 5-10, 1910. J. C. Murray, Secretary; M. W. Coates and Harry H. Collier, Judges.

Petaluma, Cal., Dec. 8-11, 1910. Fourth Annual Poultry Show of the Petaluma Poultry Association. H. R. Campbell, Secretary, Petaluma.

Ashcroft, B. C., Dec. 23-31, 1910. W. Maxwell, Secretary; H. H. Collier, Judge.

Tacoma, Wash, January 3-11, 1911. Frank L. White, Secretary, South Tacoma; Miller Purvis, Judge.

San Diego, Jan. 4-5-6-7, 1911. San Diego Pigeon and Pet Stock Club. A P. A. rules. W. C. McDougal, Secre-

Los Angeles, Cal., Jan. 5-11, 1911. Annual of The Poultry Breeders Association of Southern California at Chutes Park. A. H. Memler, Secretary, San Gabriel.

Colfax, Wash., Jan. 10-14, 1911. H. Rosenkranz, Secretary. H. H. Collier, Judge.

Walla Walla, Wash., Jan. 17-21, 1911 H. Dickinson, Secretary; H. H. Collier, Judge.

Jerome, Idaho, January 24-28, 1911. Wm. N. Hardwick, Secretary.

FARM LANDS FOR SALE.

For Sale—A 20-acre farm for $20 cash and $20 a month; possession now; $90 to $125 per acre; your crops pay for the land. Rich, level land for alfalfa, oranges, almonds, grapes, cows, chickens; abundance of ditch water, for irrigation, for $1 an acre a year. Where else can you get this? In Oakdale Colony, near good town and railroad station, climate delightful. T. Wiesendanger, 207 S. Broadway, Los Angeles, Cal.

Attractive Ranch—65 acres, near San Luis Obispo, as summer resort. Fine trout stream running through property. Plenty oak timber. Splendid hard finished house with cellar and all conveniences. Look this up for investment, income, and home. Parrish Barker, 207 Union Trust Bldg., Los Angeles.

For Sale—15-acre vegetable and fruit ranch in the famous Arroyo Grande Valley; 8-room house, barn, etc. Plenty of water. Good nearby markets in oil field. Price $8500, $3500 cash, balance 2 years, 8 per cent. R. M. Plympton, owner, Arroyo Grande, Cal.

For Sale—815 acres in San Luis Obispo County. A typical dairy ranch. Plenty of wood, water, irrigable land, buildings, fenced and cross fenced. Orchards, vineyards, oranges, lemons and walnuts do exceedingly well here. Forty acres of land suitable for these. Price $21 per acre. For further particulars apply to Mrs. F. A. Clink, Pozo, Cal.

For Sale—3-acre lot, 4-room house, fruit trees, lawn, poultry corrals, poultry houses and other buildings. Two good wells, one has mill and 2000-gal. tank, other for irrigating, plenty of good water. The soil is good. Improvements new. Price $1200, $800 cash, balance easy terms. C. E. Zeigler, Los Alamos, Cal.

2285 Acres Choice, Deep, Sandy Loam—Ideal for subdivision or eucalyptus growing. Can be cultivated any day in the year. Southern Pacific Railroad runs through the ranch. Also close to deep water for shipping. Free from wind and frost. Now all planted to grain. Price $100,000.00 for limited time. Geo. W. Sill & Co., Watsonville, Cal.

For Sale—74-acre alfalfa ranch near Los Angeles. All good sandy loam soil, under cultivation, copious supply of water. A good bargain as owner is leaving country. $30,000. Parrish Barker, 207 Union Trust Bldg., Los Angeles.

Apple Orchards—Large and small, in the only apple producing section in California. The greatest section west of Missouri River. Write for booklet. Geo. W. Sill & Co., Watsonville, Cal.

For Sale—A 14-acre farm, good for alfalfa, orchards, or small fruit. Good market, 2½ miles from town, ½ mile from school. Frame house and barn. Price $2250. Robert Werner, Loma Linda, Cal.

Fruits, Flowers, Sunshine, Progress—All these invite investigating beautiful Hemet Valley, Southern California. Booklet free. William Kingham, Hemet, Riverside County, Cal.

For Sale—El Cajon Grant Land. In the heart of El Cajon Valley, 30 acres of choice vineyard, large house, cottage and barn; trays, boxes, etc. Close to proposed electric line. S. B. Hawley, 1548 D St., San Diego, Cal.

For Sale—Well equipped poultry ranch, 19⅛ acres, Sonoma County; good house, barn, brooders, incubators and stock. For further particulars address W. Liter, Windsor, Cal.

For Sale—Forty acres improved land near Corcoran, Cal. Good for alfalfa or beets. J. W. Fairchild, 1090 E. 6th St., Pomona, Cal.

San Dimas Next to Get the P. E. Lines—Ward & Johnson are actual resident citrus growers in this most favored section of Southern California. We have a full list of all orange and lemon properties of all ages and prices. Write us today. Ward & Johnson, San Dimas, Cal.

The Best Buys in farm lands in Central California can be had through us. Call or write Sterling Securities Co., Savings & Loan Bldg., Stockton, Cal.

MISCELLANEOUS.

For Sale or Exchange—A No. 1 Twenty Century Carbide Gas Plant, 35 burners strong; with two-burner hot plate. Some globes and burners. Cost $100.00, in perfect order. $50.00 cash or would exchange for Bartlett & Kiefer pears and cherries, if No. 1 stock. Address H. L. Bauer & Sons, 737 Spring St., Los Angeles, Cal.

To California, $1.00—Join our California Information Club; only one dollar entitles you to membership for one year. We furnish the most reliable information pertaining to lands, investments, wages, hotels, places to stop; in fact, any information desired. California Information Club, Suite 411 Exchange Building, Los Angeles, Cal.

For Sale—Registered Holstein Bulls; 1 to 2 years old. Some sired by Prince Juliana, brother of former world's record heifer, Juliana De Kol. Dam and granddam, A. R. O. cows. Three record-breakers in some of their pedigrees. M. E. Sherman, Minnewawa Vineyard, Fresno, Calif.

Notice to Hinkley (Water Valley) Owners—A well digging machine is now there putting down wells any size below water to the heavy flow. Write me or Langstaff at Hinkley. Ritchie, Corona, Cal.

RARE PLANTS.

Psidium Aromaticum—Best Guava ever introduced. Extra vigorous grower; fruits globular, 2½ inch diameter; skin and pulp rose color; highly perfumed and aromatic; none better for jelly in Southern California. Strong, 3½-inch pots, 50 cents each, $5 per dozen. For sale only by the Montarioso Nursery, Santa Barbara, Cal.

Wild Plant Improvement Gardens, Santa Ana, California. Newton B. Pierce, proprietor. Rare choice ornamentals and new fruits from all lands.

LIVE STOCK.

For Sale—Black Stallion, 7 years old; weight 1000; double gaited; never been tracked; can pace a ¼ in 38 sec. Address Box "C." Cultivator Office.

Registered Shorthorn Bulls and Poland China Hogs for sale. Best breeding. P. H. Murphy, Perkins, Cal.

WANTED.

Wanted—[illegible] few months' time; electricity, [illegible] Electric Bldg., Los Angeles, Cal.

Farms Wanted—[illegible] buyers everywhere. Let us show you how to save agents' commissions. Or if you want to buy property of any kind, anywhere, write us. American Investment Association, Minneapolis, Minn.

Wanted—Position as manager or superintendent of citrus orchard by young man whom the Cultivator is authorized to state is a person of experience, ability and trained in all branches of citrus culture. Good references. Address all communications to Box 151 Ventura, Cal.

Wanted—Capable men to learn real estate, advertising and insurance business in home locality, and represent us; no canvassing; good prospects for good men; all kinds of property listed free; send yours. Mutual Realty Co., 1829 "F," 150 Nassau Street, New York.

Butterman wants a complete dairy of good cows, 75 to 150, on share; party must have alfalfa and feed, good buildings. Have had 16 years' experience in business and can give good references. For further particulars apply to Henry Grandy, Wineville, Cal.

Wanted—To lease on shares from 30 to 100 acres good alfalfa ranch with plenty water and good buildings. Address A. Bader, General Delivery, Pasadena, Cal

Wanted—Experienced man to bud about 15,000 nursery stock, peach to apricot, Imperial Valley. Address C. A. Myer, 205 Grant Bldg., Los Angeles, Cal.

DAIRY SUPPLIES.

Milk Coolers, Bottles, Caps, brushes, Buhl milk cans, Sharples separators, Babcock testers, veterinary instruments, wood soled boots and shoes, and our celebrated "Prosperity" washing powder. Guy F. Kelsey, 108 E. 8th St., Los Angeles, Cal.

LAND FOR RENT.

Ranch for Rent—75-acre grain ranch, 8 miles west of Perris. Good place for man out of health. L. D. Temple, Upland, Cal.

SEED.

California Black Walnut Seed from finest, thriftiest trees in the state. Write for prices on any quantity from 5 lbs. to a ton. M. J. Crow, Gilroy, Cal.

POULTRY.

White Orpingtons—Cook Strain. We offer for sale a limited number of trios and pens of utility and exhibition stock at bargain prices for the summer season. Our breeding pens are imported direct from Wm. Cook & Sons, Scotch Plains, N. J., and are sons and daughters of first and second prize winners, Madison Square Garden. Messrs. Cook & Sons say of them: "They are all from some of the finest birds in this country." Book orders now for next season's hatching. Eggs $5.00 per 15. $25.00 per 100. Day-old chicks 50c each. October delivery. Rancho La Solana, Box 143, Chula Vista, Cal.

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B-uy less than you need B-fore buying B-yond,
B careful and yet B the first to B-stow;
B temperate, B steadfast, to anger B slow.
B thoughtful, B thankful, what'er may B-tide,
B justful, B joyful, B cleanly B-side;
B pleasant, B patient, B fervent to all,
B best if you can, but B humble withal,
B prompt and B dutiful, still B polite;
B reverent, B quiet, and B sure and B right,
B calm, retiring, ne'er led astray,
B grateful, B cautious of those who B-tray,
B tender, B loving, B good and B-nign,
B loved thau shalt B, and all else B thine.

—Ward's Scrap Book.

DEACON BRADY'S OXEN.

DACON SILAS BRADY, farmer, living a mile outside of the village of Spoonserville, had been known as a good man for more than 40 years. Then charges were suddenly preferred against him in the church where he had held his deaconship for two decades.

The charges were startling and were made by Widow Turner, who was a neighbor of the deacon's and a member of the same church. On a certain day, at a certain hour, and in a certain field, Deacon Brady had used such profane language as caused the widow to shiver, shake and flee into her house and shut the doors and windows, to keep out his further words.

The churchmen and laymen of the village were at once aroused and public opinion was divided.

It took several explanations to make things look clear, and following the explanations the deacon pleaded guilty to the charges and said he would bear his sentence as best he could.

He had been a widower for two years. For over a year Widow Turner had been on his trail with a lasso ready to throw over his head. He had traded a cow and an old horse for a yoke of oxen, and it was while following the plow after the oxen in a field near the widow's house that the language alleged had been used.

Yes, he had been profane. He had no intention of belittling the occasion by protesting that "O, sugar!" or "Darn it all!" was the extent of his profanity.

He had used words that would have done credit to a lightning rod man with a balky team to drive up hill. He had used them in heat and was sorry for it, but he wouldn't promise not to do so again under the circumstances.

The church committee didn't want to bring Deacon Brady to trial. It was known that the charges were made through spite and jealousy, but they couldn't be passed altogether unnoticed.

The minister had been a farmer's son and driven oxen in his boyhood days, and he remembered that profanity and oxen were very closely connected.

Before proceeding to put the deacon on trial it would be charitable and Christian like to gauge the amount of provocation he had had. The tenets of the church forbade swearing at all, but here was a minister who could recognize the difference between a man swearing while telling a story on the steps of the postoffice or when suddenly and unexpectedly "lifted" by a bumble bee as he crossed a meadow.

A hint was dropped to the committee of three, all deacons, that they should try their hands at the oxen before making a report on the charges.

When Deacon Brady was informed of this his look of anxiety faded into a smile that was hopeful and bland.

The committee was invited out to the farm and Deacon Harper was invited to take the handles of the plow. He had looked the oxen over from head to tail and seen nothing wrong about them. They were sleepy and complacent. They chewed the cud of innocence and contentment. He felt that he could follow that plow around a 100-acre field and never utter a "By hen!"

Alas, for the deacon's trust in them that bear the yoke! He started in with a wide and deep Christian furrow, but it was not yet five rods long when the oxen started off on a run, and he was jumped over stumps, bounced over hummocks and lifted over thistle patches, and finally flung into a blackberry bush with one boot missing and his spine out of plumb.

He got his breath and he murmured. He got some more of it and he sat up and talked. He rolled clear of the bush and then swore. They were intended for swear words, and they were solid all through.

When the other deacons had looked at Deacon Harper in pity and reproach and Deacon Brady had felt a warm glow steal all over him, the oxen were brought back to the furrow and Deacon Smith spat on his hands and took hold of the plow handles.

He thought he knew what ailed those cattle. Deacon Brady had bought them of a man who had wickedness in his heart and was in the habit of surprising them with an oath and a blow of the gad at the same moment.

As they started off the deacon began humming the air of a hymn to secure their confidence. Plowing and humming lasted for 200 feet, and the plower had just looked back for an appreciative word, when the oxen turned the yoke, faced the plow, and next instant Deacon Smith was being run over and mashed into the yielding earth.

All the cuss words that had lain dormant for 30 years suddenly bobbed up and overflowed and floated around on the air. Deacon Spooner, who was third on the committee, groaned and looked horrified, but Deacons Brady and Harper, who had had their experience, smiled and shook hands and almost winked at each other.

Before the third and last trial, which was to be made by Deacon Spooner, the minister arrived from the village and Widow Turner put in an appearance from her house.

She had a right to be present at the trials. If there was to be any profanity it was for her to hear it and judge of its weakness or strength.

She wanted her garden plowed. If she hadn't got into a row with Deacon Brady the matter would have been suggested to him days before. If there was to be any further plowing let it take place in her garden.

The minister and other deacons thought well of the suggestion, but expected Deacon Brady to object to the cheeky proposition. To their surprise he grinned with pleasure. He was exhibiting the true spirit of a good man. The oxen he had sworn at should plow the field of his enemy and make it bring forth four-fold. The oxen and plow were accordingly transferred and duly followed.

Deacon Spooner had had the experience of the others to go by, and when he grasped the plow handles he had dignity in his bearing and a surety of victory in his heart.

He would neither hum the air of "Going Home Tomorrow," nor yet wickedly call out : "Gee-up, there, or I'll break your durned necks!" Easily he would do the trick. A firm hand on the plow and neither too fast nor too slow. An ox was not an ass, to be hit with a fence rail because he pondered and lagged; neither was he an eagle, to be yelled at when he wanted to spread his wings in flight and tear up the earth.

At the back end of the widow's garden were four hives of bees. She knew it and deacon Brady knew it, and the minister and other deacons had only to look to see them there.

All eyes and thoughts were on the oxen, however—all but the eyes and thoughts of Deacon Brady. His were on the hives and the insects floating about by the thousands, as he began to make a slow retreat and grin from ear to ear.

While Deacon Spooner was rolling up his sleeves, moistening the palms of his hands and getting ready to conquer or die, the widow looked around for the man she had charged with profanity and sighed and said:

"The day I heard Deacon Brady swearing at them oxen, and then saw him pounding them with fence rails, I told him that the poor critters was sighing for woman's influence. It's as plain to my mind as the nose on the minister's face. If the ass knoweth his master, why shouldn't the ox know his mistress? I want to give 'em a few pats and a few kind words before they start out this time. I want 'em to feel that some human being cares for them. If any of us was an unloved ox I think we would bust out the same as these do."

The oxen not only stood quiet while being petted, but they had evidently been crying for it. Their meekness and docility would have fooled a sharper man than Deacon Spooner. He let the petting go on for five minutes and then announced that he was ready to prove that driving oxen and taking the name of the Lord in vain did not necessarily go together.

The widow called attention to the wonderful change already worked by woman's influence and then stood back. Never yet did a yoke of oxen move off in more seeming content. For five minutes they switched their tails and humped their backs, and the deacon at the plow-handles had just called out that a Christian man who would hurt the feelings of a faithful and patient ox by swearing at him deserved the censure of all mankind, when there was a bellowing and a flourishing of tails, and away went the beasts of the field.

They rushed the plow against an apple tree and became detached from it. They almost ran down the minister and the widow. They drove Deacon Smith into the currant bushes and Deacon Harper over the hollyhocks, and Deacon Spooner was thrown over the plow to land on his head and feel no further interest in the proceedings.

Whether by accident or design, the oxen made straight for the beehives and upset the whole four of them at one rush. By this time Deacon Brady was far away, sitting on the fence, and that bland smile of his had become cream and peaches.

The others stood with open mouths until it was too late. A honey bee whose castle has been upset can fly 200 feet a second, and he requires only another second to start the pitchfork and buzzsaw business.

There were shouts and yells and gymnastics. Some of the plowers rushed into the house and up into the garret, and some down cellar among the pickled peaches, and the frisky oxen frisked as they never had before, and started for the next county, and arrived there to be taken for half-grown elephants.

It was an hour before Deacon Brady slid off the fence and approached the widow's house. He was met by sighs and groans and lamentations. The bees had used up all their pitchforks and gone back to the overturned hives. The minister was sitting on the kitchen table with a towel around his head and just able to see out of one eye, and the deacon softly approached him and softly said:

"My dear pastor, has something happened?"

"There has," was the reply. "When Deacon Spooner took hold to do his plowing, he forgot to swear at those infernal oxen, and none of us have been stung in less than forty places as the result."

"And the charges, pastor—the widow's charges that I blessed the horns and hoofs and tails of those critters and sent all the crows flying for the swamps?"

"Laid under the table. Brother Brady, and I wish you could get some hot vinegar to rub these swellings with!"—Portland Oregonian.

PRETTY PERSONAL.

In one of the large cities a streetcar collided with a milk-cart and sent can after can of milk splashing into the street. Soon a large crowd gathered. A very short man coming up had to stand on tiptoe to see past a stout woman in front of him.

"Goodness!" he exclaimed. "What an awful waste!"

The stout woman turned round and glared at the little man and said, sternly: "Mind your own business!"—Harper's Magazine.

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San Francisco and Los Angeles Produce Markets

Los Angeles Markets

LOS ANGELES, Aug. 31, 1910.

Butter.

Another point has been knocked from butter during the week. Market is now steady with receipts running at about 50,000 pounds daily.

Price to trade 2½c in advance of the following Produce Exchange quotations:

Extras	32½
Firsts	31
Cooking	25

Cheese.

Northern fresh	17@17½
Anchor, large	18
Oregon Daisy	18½@19
Imported Swiss	28@30
Domestic Swiss	22@24

Eggs and Poultry.

Eggs have remained stationary as to price with firm condition of market, notwithstanding large receipts.

Paying price f. o. b. L. A. is:

Local ranch candled	37
Case count buying price	33
Eastern fresh	30
Eastern storage	27

Dealers pay for live poultry f. o. b. L. A.:

Hens, per lb.	16@25
Roosters	8@16
Broilers	19
Fryers and Roasters	16@17
Turkeys	22@24
Geese	11
Ducks	14
Squabs, per doz.	1.50

Live Stock.

The following quotations are f. o. b. Los Angeles, on all stock:

Hogs, 175 to 200 lbs.	9
Prime Steers	5
Heifers	4@4½
Calves, per lb.	5¼
Sheep ewes, per head, shorn	4.00@4.50
Lambs, per head	3.50
Wethers, shorn	4.00@4.50

Potatoes.

Wholesale prices are:

Local Burbanks, ctl.	1.50
Highlands	1.40@1.50
Salinas	1.50@1.60
Sweets, Yellow, per lb.	2@2½

Onions.

Wholesale quotations:

Yellow Danvers	1.50
Australian Browns	1.50
Silver Skin, per ctl.	3.00
Garlic	6@8

Vegetables.

Wholesale quotations:

Celery is now coming into market freely and has reached a more normal level in price.

Asparagus	12@15
Artichokes, northern, doz.	90@1.00
Beets, sack	85
Beans, green	6@7
Beans, Limas	6@7
Brussels Sprouts	12
Bell Peppers, lb.	4@5
Greeen Chilis	4@5
Cabbage, per sack	1.25
Cucumbers, per box	40@50
Celery, crate	60@70
Cauliflower, per doz.	1.50
Carrots, per sack	85
Egg Plant, per lb.	5
Green Corn, box	50
Green Onions, per doz. bunches	20
Lettuce, choice, per crate	1.00
Leeks, per doz.	40
Okra, lb.	5@7
Peas, per lb.	7@10
Pumpkins, lb.	1@1½
Parsey, per doz. bunches	20
Parsnips, doz. bunches	15@20
Radishes, per dozen bunches	10@15
Rhubarb, strawberry, per lb.	4
Rhubarb, crimson winter	4
Spearmint, doz. bunches	30@35
Spinach, per dozen	20
Hubbard Squash, lb.	1½@2
Summer Squash	35
Turnips, doz.	25
Water Cress, doz. bunches	25@35
Tomatoes, box	40@60

Citrus Fruits.

Valencias	4.00
Grapefruit	2.50@3.50
Lemons	4.50@5.00

Fresh Fruits.

Wholesale prices on the market are:

Alligator Pears	3.50@4.50
Apples, Bellflowers	1.15@1.25
Gravensteins	1.00@1.50
Alexander, lug	1.00@1.50
Crabapples, lb.	3
Casabas	1.50@1.75
Cantaloupes, crate	2.75@3.00
Figs, box	1.25
Grapes, lug	60@1.00
Grapes, Tokays	1.40@1.50
Pears, box	75@1.00
Bartletts	1..50@1.75
Strawberries	7@8
Raspberries	7
Blackberries	7
Peaches, box	1..00@1.25
Plums, box	1.25@1.50
Prunes, box	1.25@1.50
Quinces, lb.	2
Watermelons, lb.	1@2

Dried Fruits.

Wholesale prices are:

Apricots	12@13
Evap. apples, fy, per lb.	8½
Peaches	6½@7½
Pears	9
Nectarines	8@10
Prunes	4@10
Plums	10

Beans Dried.

Wholesale quotations:

Limas	5.00
Black eyes	5.50
Pink, No. 1	6.75@7.00
Lady Washington	4.50
Small white	4.50
Garvanzas	4.50
Lentils	6.00

Nuts.

Wholesale quotations are:

No. 1 soft shell walnuts	15@16
No. 2 soft shell	10
Almonds, IXL, per lb.	17
Pecans, polished	15@16
Peanuts, Eastern	7½
Peanuts, Eastern	7@7½

Honey.

Wholesale quotations:

Extracted water white	8½
Extracted light amber	7
Comb W. W.	18
Light amber	15
Beeswax	30

Hay.

Buying prices f. o. b. cars L. A. are:

Barley hay	8.50@11.00
Alfalfa	9.00@10.00
Wheat hay	10.00@12.00
Tame oat	11.00@13.00

Grain.

Wholesale selling price f. o. b. Los Angeles:

Wheat, new, per ctl.	1.90@1.95
Corn	1.80
Popcorn, ctl.	3.00@3.45
Egyptian corn	1.85
White oats	1.90
Seed Rye	2.10
Seed Barley	1.30

Feed Stuff

Wholesale selling price f. o. b., Los Angeles:

Cracked Corn	1.85
Cracked Wheat	2.05
Shorts	1.80
Bran	1.55
Oil cake meal	2.50
Feed Meal	1.90
Rolled Barley	1.25

San Francisco Markets

SAN FRANCISCO, Aug. 30, 1910.

Butter.

A better tone prevails in butter, though quotations are exactly as last week. Receipts normal.

The official quotations of the San Francisco Wholesale Dairy Produce Exchange for today are as follows:

California extras, per lb.	31
California firsts	30½
California seconds	28

Cheese.

California flats, new	12½@16
Cal. Young Amer. fy. new	17@17½

Eggs and Poultry.

Eggs declined during last week till 34 was reached Thursday morning, but an immediate recovery is noted and Monday saw an advance a half point above our last quotations.

Official quotations of the S. F. Wholesale Dairy and Produce Ex. are:

Fresh ranch extras	36
Firsts	32
Seconds	26
Thirds	20
Hens, per doz.	4.50@10.00
Roosters, per doz.	4.50@8.00
Fryers, per doz.	4.50@5.00
Broilers	2.50@3.25
Spring Turkeys	26@30
Geese	1.50@2.00
Ducks	4.50@7.00
Pigeons	1.50@2.25
Squabs	2.25@2.50

Live Stock.

San Francisco prices gross weight:

Steers	3¾@5¼
Cows and heifers	2¾@4¼
Hogs	6@9½
Calves per lb.	4½@6
Milk Lambs, unshorn	6@6¼
Wethers No. 1	4½@4¾
Ewes No. 1	4@4¼

Potatoes.

Wholesale market quotations:

River White, new box	90@1.10
Salinas Burbanks	1.30@1.40
Merced Sweets, lb.	2½@3

Vegetables.

Wholesale quotations:

Artichokes	35@40
Beans, string, per lb.	3@4
Beans, Limas, lb.	4@5
Cucumbers, box	25@40
Celery, per crate	90@1.50
Chili Peppers, per box	25@40
Bell Peppers	6@7
Green Corn, sk	50@1.25
Egg Plant, per box	40@50
Lettuce, per crate	4.50@5.00
Okra, box	25@40
Peas, per lb.	3@4
Rhubarb, box	50@75
Summer Squash, box 25 lbs.	25@40
Tomatoes	40@75
Garlic	2½@3

Onions.

Onions, sk.	80@85

Citrus Fruits.

Valencias	2.50@4.50
Grapefruit	1.50@3.50
Lemons	2.50@5.50
Limes	6.00@6.50

Fresh Fruits.

Apples, box	50@1.10
Apples, Gravensteins	1.25@1.40
Apples, Bellflowers	1.00@1.15
Cantaloupes, crate	1.75@2.00
Crabapples	50@1.00
Muskmelons	2.00@2.50
Nutmegs	50@1.00
Figs, box single	40@1.00
Grapes, seedless	40@50
Grapes, Muscat	75@1.00
Grapes, Tokays	60@75
Grapes, wine, ton	13.00@17.00
Huckleberries, lb.	6@10
Pears, large box	75@1.25
Pears, Winters	50@85
Bartletts, wrapped	1.50@1.75
Peaches, box, clings	40@60
Peaches, Frees	1.00@1.25
Nectarines, red	40@90
Quinces, box	60@90
Pomegranates, box	1.00@1.25
Plums and Prunes, crate	75@85
Blackberries, chst.	5.00@6.00
Raspberries, chst.	7.00@9.00
Strawberries, chst.	4.00@6.00
Logans, chest	6.00@8.00
Pineapples, doz.	2.50@3.00
Watermelons, per doz.	1.00@2.00

Dried Fruits.

Santa Clara prunes	5@5¾
¾ cent premium for larger sizes.	
Apricots, per lb. Royal	10¾@13
Apples, evap.	7@8¼
Peaches	5¾@7½
Pears	9¾@13
Figs	4¼@5¼
Nectarines	5@6
Plums	7@8

Futures on 1910—Apricots, 10¾@12; Moorparks, 12@13; Peaches, 5@6½; Prunes, Santa Claras, 4½@4¾; ½ cent premium. Figs, 3@5¼.

RAISINS—1909 crop, seeded, per pkg.: Fancy, No. 16, 5¼@5⅜c; do. choice, 4¾@4⅞c. Loose Muscatels, in 50-lb. bxs.: Standard, 4-crown, 4¼; do. 3-crown, 4c; do. 2-crown, 3½c.

1910 crop, futures—London layers, in 20-lb. bxs.: 6-crown clusters, $2.25@2.50; do. 5-crown, $1.75@2; do. 4-crown, $1.25; 3-crown layers, $1; do. 2-crown, 95c. Seeded, per pkg.: Fancy, No. 16, 6c; choice, No. 16, 5½c. Loose Muscatels, in 50-lb. bxs.: Standard, 4-crown, 5¼c; do. 3-crown, 4½c; do. 2-crown, 4c. Dried grapes, 2¾@3c. Seedless—Muscatels, 3¼@3½c; Sultanas, 3½@3¾c; Thompsons, 4¼c.

Nuts.

Walnuts, S. S. No. 1	13½
Walnuts, hard shell	13
Almonds '10 N. P. U.	14½
Almonds, '10 Nonp.	16½
Almonds, '10 I X L	15½
Pecans	14@15
Chestnuts	14@15

Beans Dried.

Limas	4.50
Pink	6.50
Black eyes	5.60@5.75
Small white	3.90
Large white	3.85
Kidneys	6.75@7.00
Garvanzas	3.25
Bayo	5 50
Horse beans	2.00
Red Mexicans	6.00
Cranberry	4.50@4.75

Hops

Hops, 1909 crop	10@15
Hops, 1908 crop	8@10

1910 contracts now being made at 12@14 cents.

Honey.

W. W. Comb '10	15
Dark Comb	12½
Extracted W. W.	8
Extracted, dark	6½
Beeswax, per lb.	24@30

Hay.

Arrivals of hay for this week have been 7600 tons. The total amount of hay that we have received so far this month makes the immense sum of 26,000 tons, which amounts approximately to about 6000 tons more than we received during the same period last year. With the demand at the present time apparently considerably less than in former years, has caused to be accumulated a surplus of hay here in the city as the result of these immense shipments.

Under present condition of the market it is perfectly natural that no buying is being done in the country for the reason that purchases cannot be made in the country for shipment to the city at this time on any satisfactory basis. Everyone is receiving such large quantities of hay here that a decrease in shipments is desired so that an adjustment of conditions can be effected thereby.

There has been very little hay shipped away recently, with the exception of alfalfa hay, which had been sold some weeks ago for shipment to the northern country. Alfalfa hay is firm at the recent advance, and what has been arriving has been readily placed for shipment and otherwise.

What straw has been arriving recently has been difficult to place at any figure that could be called satisfactory, and the trade on this article at this time and under these market conditions is very limited.

Fancy wheat	12.00@13.0
No. 1 wheat or wh and o	9.50@10..5
No. 2 wheat or wh and o	$8.50@9.0
Choice tame oat	8.00@9.5
Other tame oat	8.00@10.0
Wild oat	7.00@9.0
Stock hay	5.00@6.0
Alfalfa	9.00@12.3
Straw	40@50

Grain.

Wheat No. 1	1.57½@1.65
Barley, good to choice	97½@1.00
Barley, poor to fair	92½@95
Oats, white	1..60@1.65
Rye, new crop	1.65@1.70
Corn, large yellow	1.55@1.60
Alfalfa seed	14@15
Mustard brown	4½
Millet	2¾
Flaxseed	5@5½
Broom corn seed, per ton	23.50

Feed Stuff.

Bran, per ton	23.50@25.00
Feed cornmeal, per ton	36.00@37.00
Cracked corn	36.00@37.00
Ground barley, per ton	22.00@23.00
Rolled oats, per ton	30.00@32.00
Middlings	32.00@34.00
Oil cake, per ton	40.00@41.50
Cocoanut cake per ton	25.00
Mixed feed, per ton	24.00@27.00
Shorts	26.00@27.00

Deciduous Market

SACRAMENTO, Cal., Aug. 27, 1910.

The following circular of the California Fruit Distributors gives number of cars of deciduous fruit shipped from all points in California for the week (7 days) ending Friday morning, August 26, 1910:

Peaches.

One hundred and eighty six and one-half cars. Peach shipment has been much better maintained than was expected one week ago. It is, however, below that of last week. Salways are now going forward in liberal quantities and will continue for the coming week, after which time there will be but few to offer. Levy's clings will also go out in considerable quantities next week and we hope for a wide distribution which will put this popular fruit into general consumption throughout the great Western and Southern territory.

Plums.

Twenty and one-fourth cars. Shipment of this fruit has now dwindled to insignificant volume and will undoubtedly be considerably less during the next seven days.

Pears.

One hundred and ten and one-fourth cars. A little more than half as many pears were shipped this last week as during the preceding one. It is expected there will be a still further decline during the week to come. There are practically no Bartletts moving, shipment being confined largely to fall and winter varieties.

Grapes.

Three hundred and one and one-fourth cars. Gradual increase in shipment is shown, but as predicted last week, the output of Malagas has declined and will continue to do so, while that of Tokays has increased. Florin is now forwarding her Tokays in fairly liberal quantities and the Lodi section will be shipping freely next week. Thompson Seedless are nearly out of the market. Black Prince will be available in such quantities as may be desired during the next ten days.

Weather conditions have been favorable since our last report.

ALMOND MARKET.

Manager Dargitz of the California Almond Growers' Exchange reports:

New York market on spot Tarragona almonds seems to be firmer at 15½c for selected lots. Offerings for October shipment at 16c. Every quotation for October shipment is higher than for present.

France has suffered severely this year in all her crops of nuts, fruits and grains. Every sort of foodstuffs is advancing. Almonds will advance shortly too. October will see record prices.

We are making some sales and have begun shipping. Expect to shell three cars this week.

It is rumored that walnut prices will be fixed, in about two weeks, around 13c.

We have rather less than 75 cars yet to sell. Indications are that the crop will not be as heavy as has been estimated. This should help us to get the prices we have indicated.

Citrus Market

LOS ANGELES, Cal., Aug. 31, 1910.

Thirty cars a day has made exceptionally light shipments for the month of August. The coming month will probably be still lighter. In fact, the total estimated crop to go is 1000 cars. At 30 per day this would clean up the market before the 10th of October, and during October of last year over 800 cars were forwarded. This gives almost positive assurance that the small quantity of fruit to go will command top of market. Present prices are running close to $4.50@4.75 f. o. b. Eastern points. This is for good quality regular sized fruit. Offs and greens are running a dollar or more under those figures, according to the amount of greenness shown.

The fall cut of lemons is very light. The receipt of foreigns is also limited so that everything now being offered is picked up quickly and nets the grower not far from $4.50 f. o. .b. Coast. Present indication is that the cutting will be very light from now on. Whether this is due to lower vitality of the trees caused by the cold weather, or other reasons, is a subject much discussed, but immediate results of the cold should have passed so that at this time normal crop should be ready for cutting from trees.

Shipments.

Total shipments of citrus fruits to date since November 1st, 1909: 28,739 cars, of which 24,385 were oranges and 3,254 lemons. To same date last season: 35,933 cars, of which 30,119 were oranges and 5,814 lemons.

NEW YORK, Monday, Aug. 29.—Ten cars of oranges and one car of lemons were sold. The market was strong with higher prices on good stock oranges, easier on poor stock, strong on lemons and on grapefruit with higher prices. The weather was cool and showery.

VALENCIAS—	Avge.
Old Mission, fancy, C. C. Chapman	$6.65
Old Mission, choice, C. C. Chapman	5.70
Golden Eagle, stand., C. C. Chap'n	4.45
Lion Head, XF., L. L. Lyon & Son	2.40
Tiger Head, XC., L. L. Lyon & Son	1.40
Orchard, or. run, Nt. Orange Co.	3.00
Standard, stand., Nt. Orange Co.	1.40
Aurora, fy., or. run, E. Peycke	4.35
Luna, XC., E. Peycke	3.65
El Molino, ch., S. M. Go. Assn.	3.50
El Toreador, stand., S. M. Gr. Assn.	2.15
Gabriella, XC., Ind. Fruit Co.	3.40
Citrus Belle, st., Ind. Fruit Co.	2.60
Sunset, S. S. Exchange	1.95
Glendora	4.45
Pointer, A. C. G. Ex., Azusa	3.25
Hunter, A. C. G. Ex., Azusa	2.25
Red Shield, A. C. G. Ex., Azusa	3.65
Red C., Covina Exchange	3.95
Cougar, Çovina Exchange	3.25
Rossmoyne, fancy, E. M. Ross	2.30
Standard, E. M. Ross	1.80
LEMONS—	
Selected	5.30
GRAPEFRUIT—Halves:	
Orchard	1.85
Mahala	2.70
Swastika	2.35
Orchard, boxes	2.95

BOSTON, Monday, Aug. 29.—Six cars sold. Weather cool. Cloudy. Market unchanged.

VALENCIAS—	Avge.
Carmencita, S. T. Ex., Fulltrton	$3.05
Nutwood, S. T. Ex., Fullerton	2.00
Golden Rule, Riverside Ex., Riv.	3.10
Fern, fancy, Duarte Fruit Co.	3.80
Standard, standard, Nat. Or. Co.	2.10
Golden Flower, fy., Red G. O. Assn	1.95
Colombo, S. T. Ex., Fullerton	2.00
La Mesa, Riverside Ex., Riv.	4.15
Golden, Riverside Ex., Riv.	215
Orchard, or. run, Nat. Or. Co.	3.35
Topaz, XC., C. C. Union	1.95
Golden Gate, XC., Red. G. A. Assn.	1.45
GRAPEFRUIT—Halves.	
Orchard	1.50

CHICAGO, Monday, Aug. 29.—Demand for lemons was only fair, but offerings were moderate and steady prices prevailed. Boxes, California choice, $5.25@5.50; extra choice, $5.75@6.00; common, $4.50@5.00.

Oranges—The market was quiet and prices showed no material change. Boxes, late Valencias, extra choice, $4.25@4..50; choice, $3.50@3.75.

CINCINNATI, Monday, Aug. 29.—One car Valencias and two cars lemons sold. Weather warm.

VALENCIAS—	Avge.
Echo, S. T. Exchange, Pasadena	$3.45
Arroyo, S. T. Exchange, Pasadena	2.75
LEMONS—	
Pet, S. A. Exchange	4.55
Royal, Q. C. Exchange, Corona	3.25
Queen Bee, Q. C. Ex., Corona	4.25
O. I. C., Q. C. Exchange, Corona	2.40

PITTSBURG, Monday, Aug. 29.—Four cars sold. Market steady on lemons and easier under light demand on oranges. Weather favorable.

VALENCIAS—	Avge.
El Capitan, S. A. Exchange	$2.20
Owl, O. K. Exchange	1.85
Puck, fancy, Green Speich	2.20
Coyote, O. K. Exchange	1.30
Security, fancy, Green Speich	2.75
LEMONS—	
Transcontinental, S. S. Ex., El Mo.	4.60
El Modena S. S. Ex., El Modena	3.80

CLEVELAND, Monday, Aug. 29.—One car Valencias and one car lemons sold. Prices on lemons higher. Cool.

VALENCIAS—	Avge.
Red C., Covina Ex., Covina	$2.75
Cougar, Covina Ex., Covina	2.40
LEMONS—	
XXX., S. T. Ex., Leffingwell	5.30
Sourball, S. T. Ex., Leffingwell	4.30
EEE, S. T. Ex., Leffingwell	4.60

PHILADELPHIA, Monday, Aug. 29.—One car Valencias and one mixed car sold.

VALENCIAS—	Avge.
Colombo, S. T. Exchange	$3.40
Stock Label	2.10
Flower, st., Ely, Gilmore	3.20
SWEETS—	
Flower	2.40
Stock Label	1.55

ST. LOUIS, Monday, Aug. 29.—Market weak on small sizes. Two cars Valencias and two cars lemons sold. Weather warm.

VALENCIAS—	Avge.
Red C., Covina Ex., Covina	$3.30
Square Brand, Riv. Ex., Riv.	1.50
Pride of California, Riv. Ex., Riv.	1.65
Golden, Riverside Ex., Riv.	2.20
La Paloma, Riverside Ex., Riv.	2.00
Braeside, halves, Riverside Ex.	.50
LEMONS—	
Quail, O. K. Exchange	4.60
Blue Jay, O. K. Exchange	2.50
Elazar, A. C. G. Ex., Azusa	3.55
Swallow, O. K. Exchange	4.15
Owl, O. K. Exchange	2.35
Green Crown, A. C. G. Ex., Azusa	4.25

FAREWELL TO THE TREES.

In the march of progress and improvement of Euclid Avenue running through Ontario and Upland, San Bernardino county, it has been deemed necessary to sacrifice the big eucalyptus trees, on the west side of the Methodist Church property, and at a sort of farewell meeting held last Sunday evening, under the trees, by the Methodist people, the following verses, composed by Mrs. L. G. Cochran, were read by her:

A Scene Near Porterville, Tulare County.

A feathery bloom 'neath a southern sun,
  A seed in a cup of brown;
The warm moist earth, then a tiny tree,
  Their beneficent life was begun.

In beauty and grace they grew apace,
  And rustled their leaves in glee,
When the murmuring breeze on summer eves
  Came softly in from the sea.

As the years went on they grew sturdy and strong,
  And towered toward the heavens, blue;
While at their feet, near the shaded street
  A thriving village grew.

Beneath their shade a church was made,
  And sentinels tall and fair.
They guard the groups of worshipers
  Who come to the house of prayer.

They whisper hope to the mourning ones
  Who pass 'neath their sheltering arms,
As they point above to a realm of love
  Unvexed by earth's alarms.

Their leafy tops give place for a home
  Such as singing birds love best,
And the vibrant air thrills with melody rare,
  As they fashion the dainty nest.

The message of love first learned in a grove,
  There verdant monarchs recall,
Since unseen by His eye, from the branches on high,
  Not even the dead leaves fall.

The Father above in his infinite love
  Made the plants and the trees to live;
Not merely to feed our physical need,
  But a nobler pleasure to give.

Who plants a tree is a friend of man,
  A blessing on all of these.
But alas! that man should wantonly plan,
  To destroy the beautiful trees.

Stately and tall, a joy to all,
  God's marvelous gift to man,
Oh, let them abide in their beauty and pride,
  Nor spoil His beneficent plan.

—Upland News.

While a Missouri woman was baking a beautiful cranberry pie last week a sack full of balloon ballast struck her chimney with a thud, knocked it down and ruined the pie. What Missouri needs is a speed limit for ballast—or stronger pie!

Riverside has shipped over 3909 cars of citrus fruits this season.

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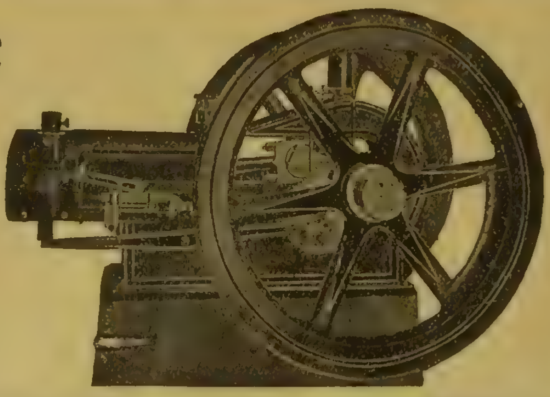

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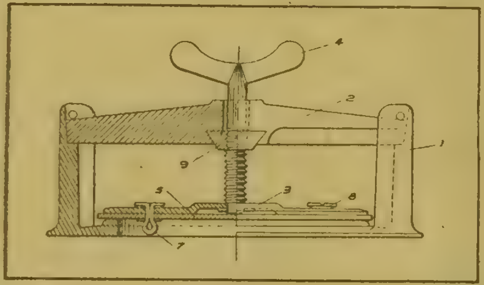

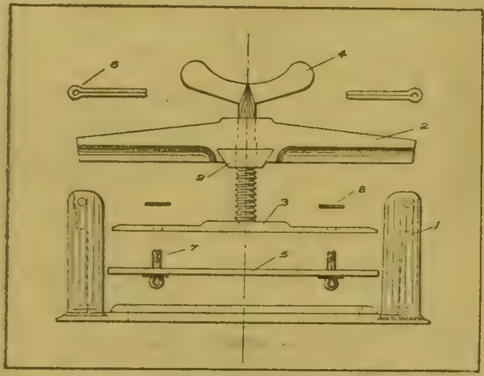

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- 3 Top or Lid
- 4 Brass Thumb Screw
- 5 Gasket
- 6 Cotter Pin
- 7 Cotter Pin
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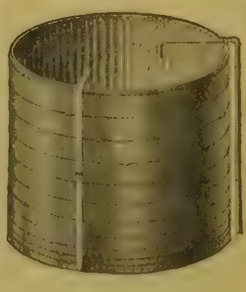
POMONA, CALIFORNIA



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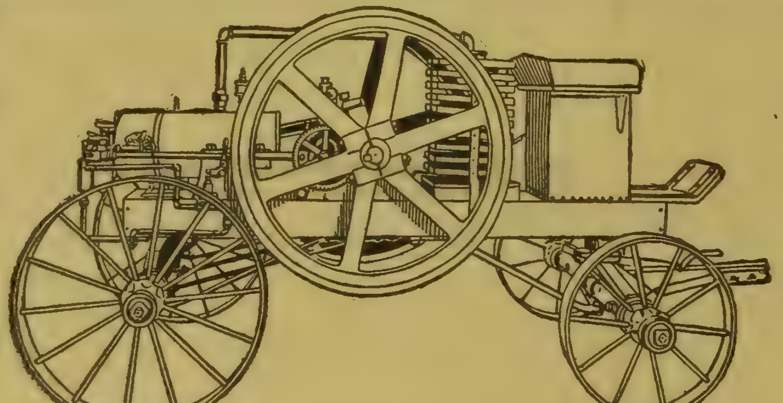

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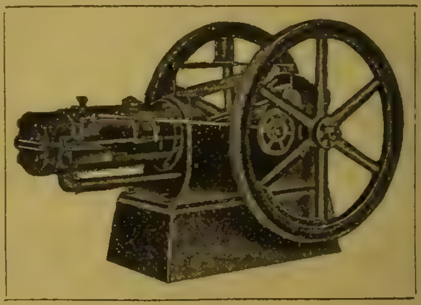

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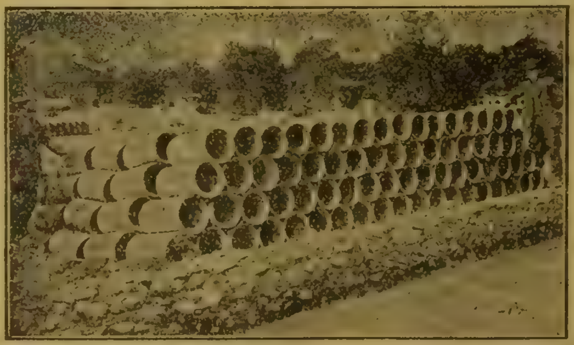

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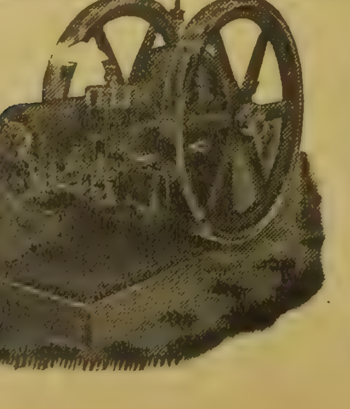

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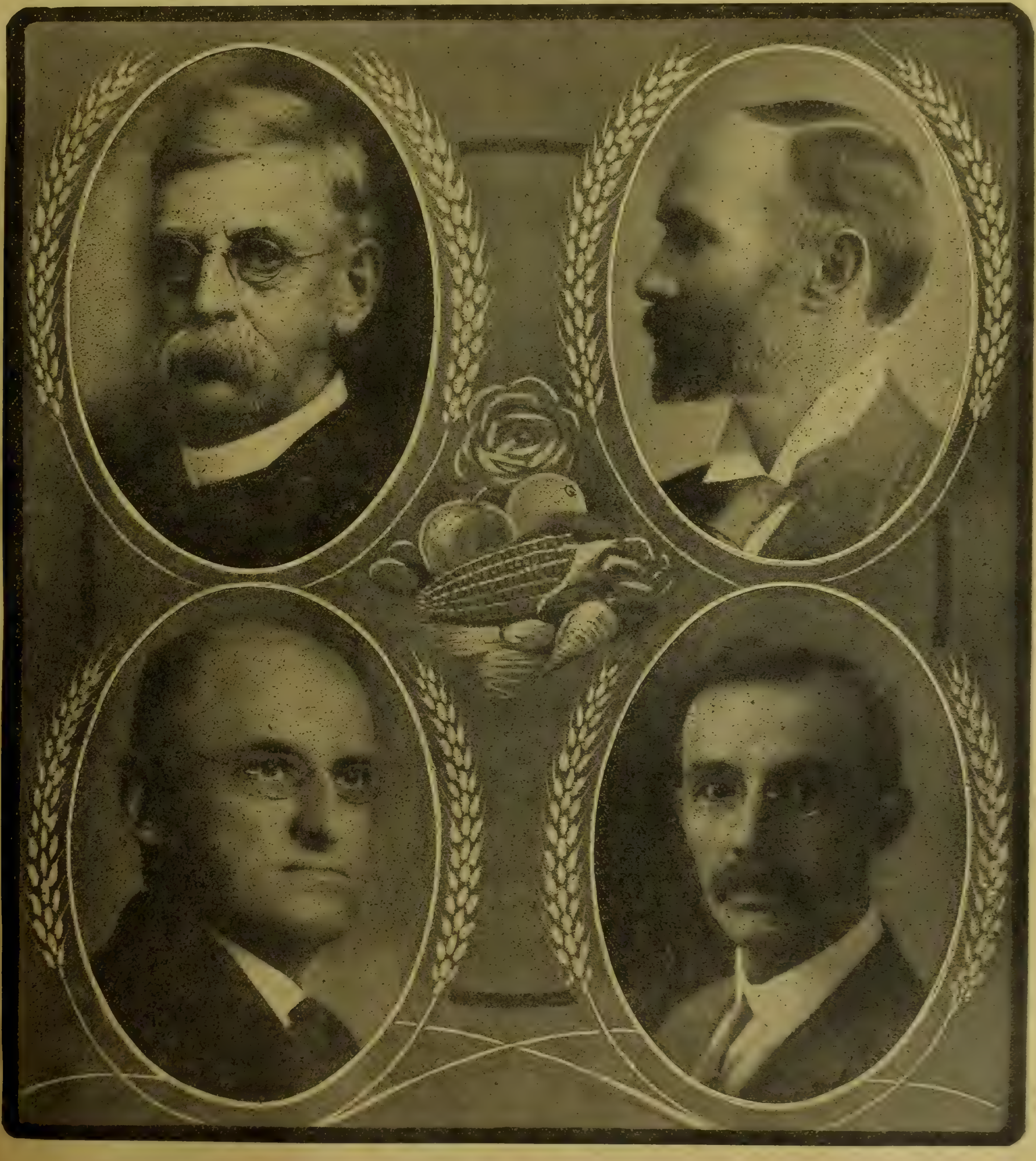

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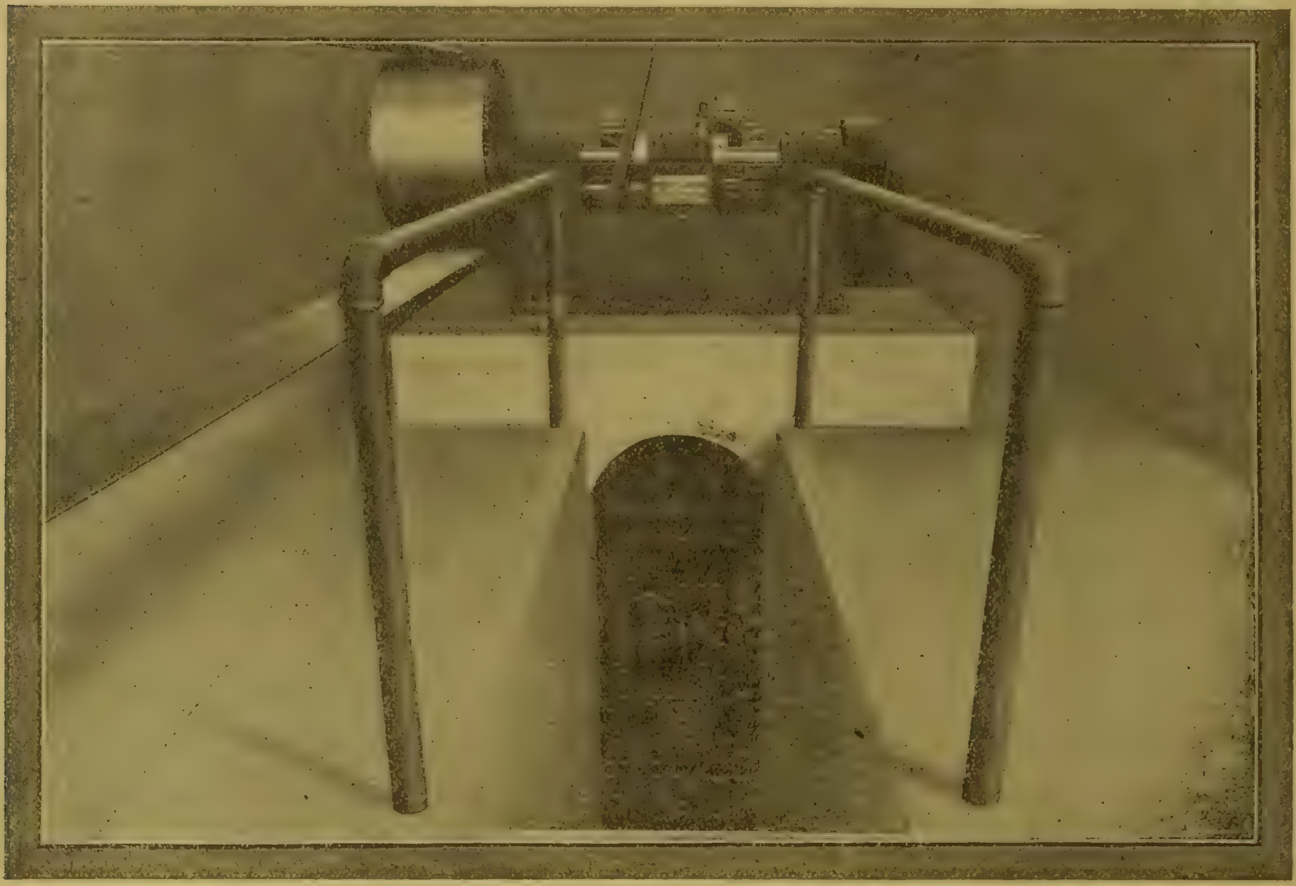

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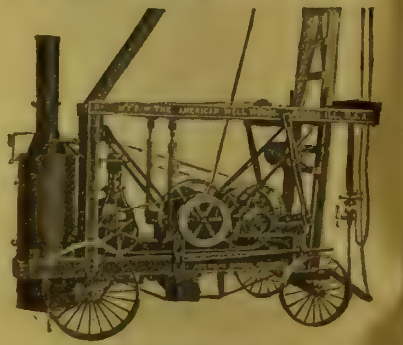

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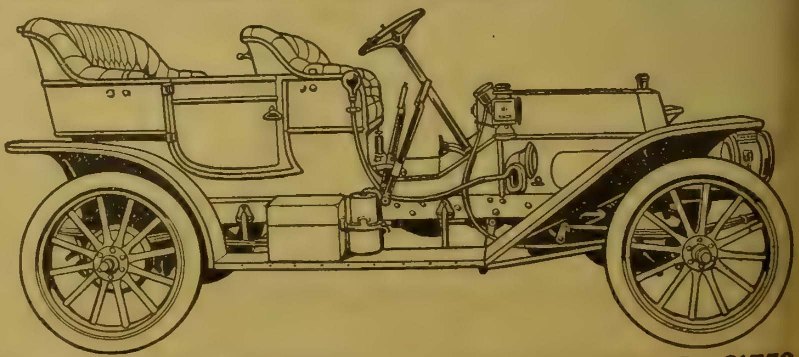

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California Cultivator

Vol. XXXV—No. 10 Los Angeles, California, Thursday, September 8, 1910 Subscription $1 a Year

How Many Hens May be Kept on an Acre?

Practical Poultry People's Plans Written for Cultivator Readers Have Valuable Suggestions

SOME weeks ago we received request from subscriber at Acampo in which he asked that our best poultry keepers give plan for keeping largest number of poultry on a certain number of acres planted in orchard with alfalfa between trees, number and size of houses and pens required; also as to whether the whole plot should be fenced and chickens allowed to run at large. This request was sent to a number of poultrymen who give their experience along this line.

J. L. Harrison, Lake Avenue Poultry Yards, Pasadena.

How many hens will one acre accommodate? This depends on the character of the soil and the energy of the owner. I have nearly eight hundred, young and old, on a strip 130 by 250 feet,—all are in perfect health and doing as well as any chickens I ever saw. The soil is loose gravel, well drained, and there are enough blue gum trees on the tract to extend a network of roots under it, thereby feeding out any impurities which might occur from improper cleaning of the yards in the rainy season. My preference is for not over twenty-five fowls to a yard and I am satisfied that about fifty is the limit number that can be profitably housed and yarded together. I keep Rhode Island Reds exclusively, though in former years I have successfully kept Leghorns, Minorcas and Rocks in these yards.

These questions of dimensions of houses and open or closed front have been most thoroughly threshed out at the monthly meetings of the Poultry Association and there is a wide variation of opinion as to the best method of housing. After hearing the testimony of many of our most successful breeders, one is lead to believe that any sort of housing will fill the bill and one's business instinct would guard against any undue extravagance in the matter of building,—if the experience of these poultrymen is to be accepted. I have seen houses costing from 15 cents to one dollar per hen, and they all seemed to do the business. My houses are five feet wide by sixteen feet long with a partition through the middle. If I were building a new plant I would make the houses eight feet wide and use "Rubberoid" instead of boards. I regard open front houses as a dangerous experiment in a climate like this, with an average of thirty degrees variation in temperature between day and night. My experience has demonstrated to my own satisfaction that a fowl properly protected from the chill night air lays better than the one roosting in a tree or in an open shed.

Herman Zander, Sunny Slope Poultry Ranch, Santa Paula.

One acre will accommodate from 600 to 800 hens according to the variety: Mediterraneans up to 800, American breeds 600. The number kept in one pen should be determined by the size of pen. I have found that pens of 35 by 75, or the equivalent, will easily keep 75 of the American breed or 100 of the Mediterranean. I keep Rhode Island Reds, White Wyandottes, and Anconas, and figures given will apply to both American and Mediterranean breeds.

As to dimensions I find houses 6 by 6 most satisfactory, as they are more easily kept in first class condition, both as to cleanliness and amount of labor. I find open front houses without floors most satisfactory in every way. My houses are built as follows: I use 2 by 6 to make runners, as if building a sled. On this I build a light frame of 1 by 3, which is placed 3½ feet high in front and 2½ feet in back. Cover this with wire netting and stretch over this half-ply roofing paper. The wire netting is put on to hold the roofing paper taut, being just as satisfactory as boards, but very much lighter, the roofing paper being vermin proof. I make my houses light, as I have them all moved on to fresh ground weekly, guaranteeing sweet fresh ground underneath the roosts, and at the same time very much facilitating the cleaning up of the droppings. Front and bottom being open, secures plenty of fresh air for the hens, the back coming only within 6 inches of the ground. I also front the houses toward the south in this part of the country, thus keeping off the heavy winds. For the rainy season I have a frame covered with wire netting and roofing paper, same as the house, which is hinged to top of house and reaches down even with the roosts, which are 18 inches from the ground. During the summer and at all times in clear weather these frames are raised up forming an awning, thus giving additional shade during hot part of day.

A. G. Goodacre, Compton.

You can comfortably keep 500 hens on an acre; as many as 80 to 100 Rhode Island Reds in one flock and from 80 to 200 Leghorns to the flock. We use open fronts decidedly, and prefer a shed roof with a three to four-foot projection in front, thus really making a double pitch roof, with back at least four feet. Perches are spaced 14 inches apart. The length and width of building we designed to meet requirements of flock, building of any cheap material, possibly $12.00 per 1000 shakes, or paper, or one-half inch redwood, costing from 20 cents to 25 cents per hen.

We breed Orpingtons, Reds, Leghorns and Anconas. We keep our Orpingtons in small flocks and keep them busy. Six inches of perch room is allowed for Reds and Leghorns and always some spare room besides.

Mrs. M. E. Sherman, Minnewawa Ranch, Fresno.

We have never specialized as chicken raisers but have always tried to keep enough to furnish eggs and food for the table. We either raise them in the incubator, by hens, or by buying the newly hatched chicks. The difference in plans is not premeditated, but grows out of the fact that we are busy people and if we happen to have someone that can be trusted to run the incubator and after attend to the chickens in the brooders, we use this way; if we have not the proper person then the hens are allowed to mother their broods. We find that four hundred little chickens give us about enough each season to have on the table four or five times a week and to keep up the supply of young hens as layers.

The yards are five in number. Four of them measure 85 feet by 55 each, while the large yard, or fifth one, is 110 by 110 feet. Each yard has a house and is piped with running water. The large yard contains in addition to the regular house, a good sized brooder house with a feed storage room and on the second floor is placed a pigeonry. The brooder room on the first floor has four fireless brooders in it and a good oil stove to furnish heat. The whole side is of glass to let in sunshine. Each brooder has an indoor yard and an outdoor yard fenced and covered with wire.

With the exception of the larger brooder house the other houses are merely lean-to's with entire front open to the south. These are built as cheaply as possible and average about twelve feet by ten and are five feet at the eaves and eight to ten in the front. A simple eucalyptus pole swung by wire makes a good roost and a mounting board laid along the back gives entrance to the laying boxes. These are arranged loosely on a shelf fastened against the outside of the rear of the house. Holes cut through from the inside admit the hens. In front of these houses planking to make a rough support for a roof of palm leaves is put up and makes a summer lounging place for the hens in the shade. The floor of these simple houses is the natural earth. We build them in this cheap way so that if they become too full of vermin to be controlled readily by the spraying, we can remove and build on the other side of the lot new houses.

This entire chicken yard is in alfalfa and requires to be cut two or three times each season before the chickens gain control of it. There are eighteen quince and Japanese persimmon trees growing in yard that afford a shade to the hens.

We consider that 20 hens do better in yards of this size than a larger number. As to the breed of chickens. We have now the Barred Rocks and they seem to be the best for us all around. We had at first, twenty-five years ago, Black Spanish, then Langshans, then White Leghorns, then Gray Brahma, then Brown Leghorns, and now Barred Rocks for the past five years. The Leghorns, of course, lay more eggs, but are very troublesome on a fruit ranch as they are hard to confine to the yards and make their way into everything. Disposal of them was brought about by their persistent raiding of the olives in the fruit boxes. Some years like this one, when we have an undue number of roosters in the young chickens and have to sell eight or ten dozen, we find greater profit in yellow-legged white pin-feathered chickens.

O. M. Robbins, Santa Ana.

One acre can be made to accommodate 2500 hens if all feed is raised from other land. A yard 10x20 will accommodate 10 to 12 hens and a cock nicely, which is about the correct number for one pen to get the best results. I believe in small flocks and small pens where one has not much room. I handle Buff Leghorns and have always been practically free from disease with my adults. Growing chicks sometimes get lice when I am too busy at office to properly attend to them. Once in a while I lose a chick from white diarrhoea, but it is always when I have been busy. I think that the heavier breeds should have about 25 to 50 per cent more room than the Leghorns.

As to houses, my preference is a tight board fence running east and west, then a slant roof about 6 feet wide fronting the north to protect from rain—no house at all. The roof covers the scratching pen, and the roosts are over the straw with boards beneath the roosts for droppings. If birds are kept from drafts and rain no more protection is necessary.

I have one portable house 5 feet wide, 7 feet deep, with two stories 3

Continued on Page 239.

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THE OLIVE TREE.

THERE are as many as eighteen kinds of this tree and its fruits. The distinction lies mostly between the wild and the cultivated, the former of which is dwarfish, useless and unproductive, while the latter is valuable, both for its fruit and the beauty of the tree. The difference has been compared to that between the crab and the choice apple, or the sloe and the plum.

The tree is an evergreen, and runs up to a height of 20 or 30 feet; its trunk is knotty, its bark smooth and of an ash color, its leaves oblong and resemble the willow, dark green above and whitish underneath. It blooms in June, the bloom is in bunches, small white and beautiful. The fruit is oval in form, first green, then pale and ultimately black. It will grow on the driest and most flinty soil and lives to a great age.

It abounds in the eastern countries and likely had its origin in Asia, thence transplanted into Southern Europe. It does not grow spontaneously in Europe as in Asia. It is abundant in Syria and Palestine. In the valleys and on the mountains of the Holy Land it grows with its ancient freshness and may there be seen growing as it grew eleven centuries before the Christian era.

During the siege of Jerusalem by Titus, the trees were all cut down, but from the roots a new growth sprang up. It grows well on the shores of the Mediterranean, and flourishes in Greece.

It will grow in Great Britain if protected from frost. In Egypt its cultivation has failed to a great extent owing to the indolent habits of the people. The present interests are looking to a more general growth there.

It may be popagated by layering, grafting or budding. Its growth is confined to warm climates. The olive at one time in Palestine was considered an emblem of prosperity and by numerous tribes, as sacred. Among the Greeks to this day the olive branch with its fruits is used to adorn their apartments at nuptial feasts.

Among the ancients it was considered an emblem of peace and reconciliation and was among others sacred to Appollo.

The olive was one of the principal fruits cultivated by the Jews, who used it for their daily food, it being highly valued for its nutritive qualities. The leading and most valuable product was the oil made from its fruit. This oil is very useful in many ways. The Greeks, with many others, use it in cooking, using it in almost every dish. The Jews used it only as a food, but under the ceremonial law it was an ingredient in a costly perfume wherewith the sacred orders o the priesthood were annointed. There is no doubt but that it was this ointment that the woman poured upon the head of Jesus. This oil has long been used in mitigating pain, and to cure poisonous bites of vipers, and has long been used with great success in constitutional treatment.

It is not known as well as it should be, that the proper use of this oil is a constitutional cure for consumption in its incipient stages, and may be used with great benefit in all lung trouble, even in the last stages. Great care should be taken that the oil is pure. In order to have pure oil, great care must be taken in the making.

In order to make it pure, the fruit must be at its best matured stage, carefully gathered, that is, picked from the trees unbruised. The oil should be expressed immediately after gathering, and put into air tight sealed bottles.

The following prescription for lung trouble will prove of great merit to those who carefully use it:

One-third part pure olive oil, two thirds part pure grape juice, unfermented wine. Mix well together, shaking just before using. Take one tablespoonful one-half hour before meals and one dose just before going to bed. Eat three regular meals each day. Eat nothing between meals. Eat good, easily digested food. Do not overload the stomach. Take plenty of out-door exercise, sleep in a well ventilated room, but not in a draft of air from a window or otherwise, and practice full breathing morning, noon and night.

By following this prescription strictly and long enough most cases of consumption in first stages will be cured and much relief and length of life in the last stages.—Southern Fruit Grower.

SOUR CLOVER.

In some sections of California, especially along irrigation ditches, both the sweet and sour clovers are a perplexing pest. The growth is usually very rank and troublesome to remove. To make use of some of these pests should be our aim, and some have found that the sour clover, Melilotus indica, has great value as a green manure crop. It has the faculty of sending its roots very deep into the soil and gives a great bulk of green stuff for turning under. If it is sown early so as to get thoroughly rooted before cool weather a very strong growth will be made before plowing under time. It should be sown broadcast at the rate of about 15 pounds per acre. Early in October is a good time to sow, though it is sown as late as November. Of course, where sown early, it must be irrigated. Regarding the seeding of this crop we quote from circular of the Arizona Experiment Station:

"The method of seeding found to be the best is to level the ground well, sow broadcast, furrow with a three-shovel furrower, roll and irrigate by running the water in the furrows which should be two or three feet apart. Irrigating it during the winter will not only increase the yield but benefit the orchard. It should be plowed under when about to blossom. At this stage the yield proved to be 15 to 18 tons of green matter. If permitted to grow longer it becomes more woody and does not turn under so well or decay so rapidly."

The Lankershim Ranch in Los Angeles county, is now harvesting its last big crop of grain. In one field it had 47,000 acres which acreage will now be cut up into smaller ranches.

Tobacco growers at Yorba, Orange county, now have growing over 80 acres which is said to be the largest acreage of tobacco in the state.

CALIFORNIA RED AND YELLOW SCALES.

By A. W. Morrill, Entomologist, Arizona Horticultural Commission.

These two insects are established nearer to Arizona than any other of the important citrus pests. They are comparatively small in size and being closely related are distinguished principally by their differences in color. Their feeding habits are distinctly different. On citrus the red scale infests bark, fruit and leaves, while the yellow scale infests only the fruit and leaves. The former, in addition to citrus, infests many fruits and ornamental plants such as rose, apple, peach and other rosaceous plants, fig, olive, various palms, oak willow and Euonymus. The latter species has been recorded as infesting only fig, Euonymus and Aucuba in addition to citrus. There is no egg stage in either species, the young being born alive.

In general the red scale is considered the most destructive of the two, although the yellow scale exceeds in destructiveness in some localities. Both scales are considered as unusually well adapted to thrive in hot, dry climates.

Concerning the red scale, Mr. Cundiff, horticultural commissioner of Riverside county, said in an address before the Claremont Pomological club: "The red scale is essentially a hot weather insect and revels in a dry, arid, climate. The unusually warm summers following the mild winters that have prevailed during the past few years have caused an unprecedented spread of the insect and has made the control of it in some localities very troublesome and expensive." Concerning the red scale in Mexico, Dr. Coit reports as follows (Bulletin 58, Arizona Agricultural Experiment Station): "The writer found many orange groves about Guaymas, Sonora, practically ruined by this scale. Also at Hermosillo, where the conditions are very much like our own, the citizens have been compelled to cut down and burn all the orange trees on the Capitol grounds as well as many about town in order to bring the pest under control and prevent its spreading into large commercial orchards nearby.

The California red scale was reported several years ago as occuring in Florida, but in a period of over three years spent in citrus insect investigations the writer has never observed it in that state.

The yellow scale in Southern California is most injurious in the highlands and dryer sections, notably in the foothill region of the Sierra Madre range, and is reported as prevalent in the hot interior valleys of northern California.

The red and yellow scales are best controlled by fumigation. In their control in San Bernardino county, California, it is reported that about $35,000 worth of chemicals were used by the county fumigating outfits between July 15, 1908, and February 15, 1909. This does not include the cost of chemicals used by private outfits, which are numerous.

The yellow scale is partially controlled in some sections of California by a minute parasite introduced from Japan, but natural enemies are considered of no practiacl value in the control of the red scale.

Kerman, Fresno county, boasts of millet six feet high.

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All arrangements for the fuel oil are now being made by the Fruit Growers Supply Co. and all those using our heaters will be given sufficient oil and at a very low cost. All members of the Fruit Growers Supply Company can send their orders in to the Supply Company. All independent growers who want our Orchard Heater can communicate with our local agents.

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Deciduous Fruit Culture

THE APPLE IN SOUTHERN CALIFORNIA.

By Frederick Maskew, Sacramento.

WITH a very few exceptions, the older apple orchards of Los Angeles county, ranging in extent from 1 to 10 acres are merely an incident to the general business of agriculture, and as such have passed through all the vicissitudes common to such an arrangement. A careful study of these orchards shows clearly that the conditions found there are by no means due to fundamental causes such as soil, moisture, or climate, they are simply the logical accompaniments of lack of knowledge of suitable varieties and poor methods of management. Especially is this so in the selection of varieties.

One of the most prominent features in these orchards that have been under consideration in this paper was their tendency to produce large crops of fruit. In many of them there were almost as many different varieties as there were individual trees. Still the full bearing habit was universal. Out of this infinity of varieties came two that were paramount to all others, the White Winter Pearmain and the Yellow Bellefleur. These, in common with the others produced good full crops of fruit and the fruit possessed a good market value. Close observers soon commenced to realize that these varieties could be grown at a profit and with a view to enhancing these profits commenced to plant out orchards composed entirely of one or the other of these two varieties, especially was this so of the White Winter Pearmain.

Thus commenced what may be considered the second period of apple orcharding in that region.

The young trees in these orchards grew with all the customary vigor of the White Winter Pearmain, but they failed to set a crop of fruit. Season after season, when the Pearmain trees in the older orchards of mixed varieties were breaking down under their load of fruit, the younger orchards set in solid blocks of one variety were not producing a box to the tree.

I have in mind a number of these orchards and their owners with both of which I was intimately acquainted at that time. Without taking up your time in going into details, I will state that these conditions brought those who were vitally interested in this matter face to face with the question of cross-pollination and its bearing upon the production of fruit in commercial apple orchards.

The many influences that enter into the normal failure of the fruit blossoms to set, such as heavy wood growth in the young trees, the attack of insects and fungi on the blossoms, frost, rain and other unfavorable weather during blossom season were all given careful consideration, during the investigation that was made of this problem by a number of the leading apple growers of that section. Many arguments, some of them very ingenious, were made pro and con as to the value or even the desirability of cross-pollination. It was, however, clearly recognized that self-sterility is not a constant character with any variety. The same variety may self-sterile in one place and nea self-fertile in another. The adap tion of a variety to soil and clima has much to do with its self-fertili It would be fallacious to attempt separate apple trees into two defin classes, the self-fertile and the se sterile. All this goes to show th the problem is as much a study conditions as of varieties, and we can never be perfectly sure th any variety will be self-fertile in new region. Planting for cross-p lination purposes as a matter of surance in fruit-production is now coming a general orchard practice

The practical bearing of the pro lem is this. There are certain rieties of apples that due to the profitableness we wish to grow la ly for the general market, but we fi that they cannot be depended upon produce full crops when plante alone. They need the pollen of othe varieties to make them fruitful. The we must plant other varieties nea them as pollenizers.

Having determined upon the v riety to be grown for a general cro the most important point in the sele tion of the pollenizer is that the tw shall blossom at the same time. Th only way in which a pollenizer ca be of service in promoting fruitfu ness in the variety planted for th general crop is by supplying it wi pollen. This means that the pisti of one variety must be ready to r ceive the pollen when the stamen of the other are ripe; this is on possible when both varieties bloo simultaneously.

The comparative blooming of v rieties is something of a local pro lem Difference of location, altitud soil and weather, govern the time appearance of the blossoms, bu series of observations made by th writer, tend to show that while th date of blossoming may be hastene or retarded by local conditions, th comparative time is approximatel the same for different varieties i localities having similar conditions o soil and climate.

The variety to be used as a polle izer is, of course, governed by variety to be planted for the ma crop. This question having been de cided, the next question is to kno how many trees will be necessary pollinate the self-sterile variety. Th brings us back in so far as my knowl edge extends, to the apple orchards of Los Angeles county.

Out of the failures, disappointments and difficulties of the two periods o apple growing just described came the apple orchards of today. A study of these will show that the owners are beginning to pay more attention to some of the finer problems of ap ple culture, such as the relation o varieties to pollination, their suscep tibility to disease, the individuality of trees, a better class of nursery stock and the question of selecting the buds and cions for propagating purposes. In these young apple or chards, can be seen on every han the principles of selection, plantin and pruning advocated by Wickson Powell and others, applied all uncon sciously perhaps of their origin b the workers, but in evidence, never theless to the close observer.

Such an orchard is the one owne

by Mr. Cudahy at Florence. Here there are 30,000 apple trees in one block. To insure fruitfulness in this orchard, one row of pollenizers was planted to each eight rows of the varieties considered best adapted to the location and market demands. The pollenizers were planted in straight rows to facilitate harvesting. Fall Pippin was used principally as a pollenizer for the White Winter Pearmain and in some instances Yellow Newtown Pippin for the Yellow Bellefleurs. I was in this orchard about 14 months ago and from my own observation, as also the statements of the Superintendent, this arrangement had proved satisfactory from the standpoint of the production of fruit.

In the effort made by the apple growers of the region to take advantage of all the lessons learned from the two preceding periods of the industry, great attention was paid to the question of the quality of nursery stock. A bud on a whole root was considered the standard of excellence, and it was soon learned that a more uniform stand of symmetrical trees could be obtained by planting those with a straight whip-like top of one year's growth, than from those that had been grown the second year in nursery rows. The conditions that resulted in this decision were found to be as follows: In well grown one year old wood every eye or bud is strong and perfect and can be depended upon to grow when the young tree is cut back to the desired height, thus insuring a sufficient number of shoots from which to select those that are to form the new and permanent head of the tree. In two years on older wood these buds have performed their proper functions in the production of either shoots or leaves and cannot be depended upon to put out uniformly. It was found that trees grown the second year in nursery rows, had invariably been branched too high to meet the accepted standard of height in that locality, and when these were cut back below the point at which they had been branched, they would almost invariably put out from a bud just above the ground.

In following up this matter of nursery stock further it was found that there were still other factors to be considered.

In almost every apple orchard, even in those in which the general growth had been satisfactory and fairly uniform, there was found to be a distinct individuality in the trees of the same variety, regular bearers, erratic bearers, shy bearers. The foliage differed too. I have seen a Yellow Bellefleur, one out of fifty, carrying rich, green leaves throughout the season, when the foliage of the remainder was brown and withered from the attack of mildew, and this not only for one season, but for several consecutive seasons.

It was claimed at the time that these conditions were the logical results of the indiscriminate cutting of buds for propagating purposes, especially so of cutting buds and scions from nursery stock from young trees that had not had an opportunity to develop any characteristics whatever, either good, bad or indifferent.

If the laws of heredity hold good in the vegetable kingdom, and the history of horticulture will justify us in concluding that they do, the character of resistance of foliage and habits of hearing can be transmitted through the buds. It is well at this point to make the distinction between a type and a character. No amount of care in selection will transmit a type. A type is the result of environment, character the result of heredity.

In the effort to transmit desirable characteristics through propagating wood it is well to remember that the individuality of an apple tree cannot be determined by the observations of a single season. It must show persistent good behavior for several seasons and must be accurately watched and compared with other similar trees before we can obtain a correct estimate of its habits. Many causes tend to produce heavy bearing, high color or large size, for a season or two, but when a tree under average orchard conditions shows that its habits of bearing and health or foliage are stable, then there can be little question about the transmission of its characteristics through its buds, and the annual crop of buds from such a tree should be worth more money for propagating purposes than the market value of its fruit.

In the consummation of this ideal of having the good habits of the apple trees universal throughout the orchard the initial step must be taken by the planter. He must create the demand for pedigreed stock and must be prepared to pay accordingly. A propagator of apple trees can cut 1,000 buds in the nursery rows in less time than he can ten from an individual tree. In all lines of business, time costs money, but the cost of nursery stock, if the quality is there, should be the least of factors that enter into a long-time investment like an apple orchard.

And now, for the especial benefit of those who propose to extend the apple industry into new regions, the lessons drawn from a prolonged study of the apple orchards of Los Angeles county, concerning the laying of the foundation of a commercial apple orchard may be recapitulated as follows:

Study well the local conditions before selecting the permanent varieties.

Insure fruitfulness in large blocks of one variety of apple trees, by planting pollenizers among them.

Look into the origin of the propagating wood used before buying nursery stock.

There is nothing in all of what has just been said that is new. No one knows that better than I do. In apple orcharding, as in every other phase of horticulture, the state of knowledge is far, far in advance of the state of practice. These truths have been set forth time and time again by such masters of the science as Waite, Wickson, Powell, Fletcher and others. All the good that I could hope to come from this paper lies in the fact that the report of this convention will be widely circulated and some future planter of a commercial apple orchards may perhaps have his memory refreshed upon these points before he plants his orchard rather than after the loss of many years and much money.

FEDERAL INSECTICIDE AND FUNGICIDE LAW.

Under an act signed by President Taft April 26, the manufacture, sale, or transportation in interstate commerce, in the District of Columbia, or the Territories, of adulterated or misbranded Paris green, lead arsenate, and other insecticides and fungicides is prohibited after January 1, 1911, at which time the act goes into effect.

The law corresponds in a general way to the federal food and drugs act of 1906. Rules and regulations for its enforcement are to be formulated by the Secretary of the Treasury, the Secretary of Agriculture, and the Secretary of Commerce and Labor, but definitions and standards are adopted for most of the principal products dealt with. Violations of the law constitute a misdemeanor, and are punishable by a fine or imprisonment or both. The analytical work is to be under the direction and supervision of the Bureau of Chemistry of the Department of Agriculture.

Report of the Condition of

The First National Bank of Los Angeles

At the Close of Business, September 1st, 1910

RESOURCES

Loans and Discounts			$11,581,843.16
Overdrafts, secured and unsecured			38,297.93
U. S. Bonds to secure circulation			1,250,000.00
U. S. Bonds to secure U. S. Deposits			305,000.00
U. S. Bonds on hand			5,000.00
Premiums on U. S. Bonds			------
Bonds, Securities, etc			908,100.00
Due from National Banks (not reserve agents)		$ 941,236.76	
Due from State banks and bankers		137,597.14	
Due from approved reserve agents		649,251.16	
Checks and other cash items		97,558.43	
Exchange for clearing house		302,075.88	
Notes of other National Banks		96,855.00	
Fractional paper currency, nickels and cents		6,110.32	
Lawful money reserve in bank, viz.:			
Specie	$1,765,502.00		
Legal tender notes	115,600.00	1,881,102.00	
Cash and Sight Exchange			**4,111,786.69**
Redemption Fund with U. S. Treasurer			62,500.00
Total			**$18,262,527.78**

LIABILITIES.

Capital stock paid in		$1,250,000.00
Surplus fund		250,000.00
Undivided profits, less expenses and taxes paid		1,603,613.23
National Bank notes outstanding		1,021,950.00
Due to other National Banks	$ 1,308,129.33	
Due to State banks and bankers	725,734.65	
Due to trust and savings banks	949,705.82	
Dividends unpaid	1,415.00	
Individual deposits subject to check	10,247,861.54	
Demand certificates of deposit	162,053.17	
Certified checks	28,923.87	
Cashier's checks outstanding	423,342.72	
U. S Deposits	278,709.84	
Letters of credit	11,086.00	
Total Deposits		**14,136,961.94**
Reserved for Taxes		2.61
Total		**$18,262,527.78**

No Real Estate. No Furniture and Fixtures.

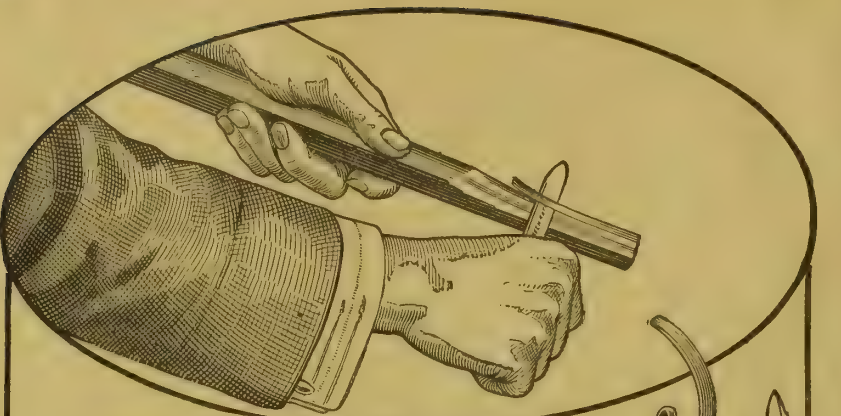
STATE OF CALIFORNIA, County of Los Angeles, ss.

I, W. T. S. Hammond, Cashier of the above named Bank, do solemnly swear that the above statement is true to the best of my knowledge and belief.

W. T. S. HAMMOND, Cashier.

Subscribed and sworn to before me this 2nd day of September, 1910.
HORACE B. KING, Notary Public.

Correct—Attest:
J. M. ELLIOTT, JOHN P. BURKE,
STODDARD JESS, W. C. PATTERSON, } Directors



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The Braun-Knecht-Heimann Co., 576 Mission St., San Francisco, Cal.
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THE SIRE.

THE head of the dairy herd is more important than the cows——if the herd is to be built up from the heifers raised on the farm. The heifers are half the blood of the sire mathematically, usually they are much more like the sire's family in performance. In the pure bred herd the sire's blood is a strengthening against the individual irregularites that have appeared in the cows. The sire tends to make the herd more alike in vigor, in feeding qualities, and in general handling. A herd that is alike in these respects means more than one thinks at first. After buying cows, a few here and a few there, and placing them together has been tried, one comes to know how much better it is to have cows of like temperament to feed and milk.

Cost.

The first cost of a registered sire often looks heavy to those that do not understand the reason why others are willing to pay for them. Add five hundred or a thousand dollars to the increased milk or butter yield of a herd every year from the use of an improved animal and he pays for himself over and over each year. A herd producing three hundred and fifty pounds of butter per cow each year is considered profitable and yet this yield can be raised fifty or even a hundred pounds by the use of a sire having that capacity inherited from his ancestors. There is a difference in the prepotency of sires that is not easily accounted for by any known rule. Some times one son of a cow will be a great herd bull while all the rest are only passable. There is one feature that is not often considered, that is that the bull of good blood and that is in himself a good individual does not pull down the herd. They may not gain rapidly but they fail to go back. The securing of the animal that does improve a herd rapidly is one of the fortunes of war.

Testing.

Until a sire has enough daughters to test for butter fat one may not be sure of his value but in a degree he may be tested very young. When nine months old use him on a few selected heifers, say four or five and then let the matter rest. When these heifers calve, if the offspring is as good, as individuals, as the parents, one may rest assured that it is safe, when the sire is two years old to use him for a few more. Then if he still shows quality in the calves he should be retained until some few can be tested for butter fat. If the youngsters he produces lack quality, do not keep him no matter what he cost, or what his breeding may be. It is always well to cut off cost as early as possible for it is very easy to run into debt for a herd of cows. High cost of feed and labor soon eats up profits. The casting away of the money in a herd bull is little compared to the loss of retaining him. It is a case where foresight is better company than hindsight.

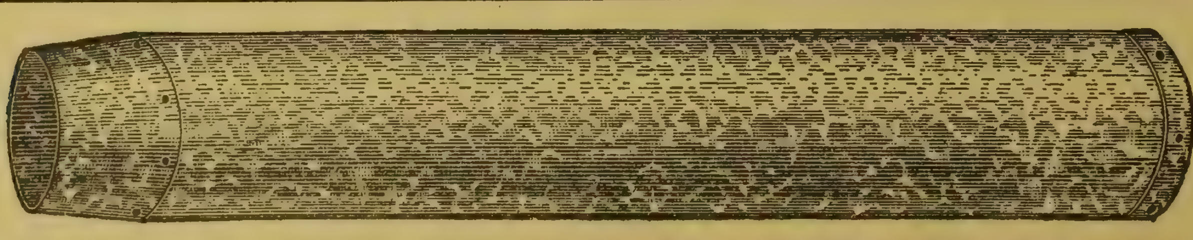
Grade Herd.

The sire of a grade herd should always be a pure bred animal for there is mixing up enough in blood in a grade cow. Mixed blood stands for mixed inheritance and mixed inheritance stands for mixed transmission. Lack of breeding makes mongrels and degeneration of the good qualities. This is noticeable in dogs; while some curs are bright and clever, one has only to see the dogs in Egypt and in India to realize what the word cur means as a term of contempt. The pure bred sire when placed at the head of a grade herd has all the inheritance in one direction and if he transmits fifty per cent of that to the calves they have a stronger boost toward goodness than to any one other thing. This is what is meant when it is truthfully said that the sire is more than half the herd.

Mistakes.

There are some foolish mistakes made in the matter of buying pure bred bulls to head grade herds. Milk making in a cow mean balance of health and functions and brains. Brains means more in animals than we think for the intelligent animal is trusting and not peevish. The mixed breed cow is not as strong a cow as one bred for special purposes, and this stamina cannot be made but must be bred into the constitution. Therefore when a man with a grade herd, buys a sire that has been bred up to the top notch of performance in his ancestory, he is not wise. The first cost is too great and the cross too violent. The calves in many instances will not have the vigor and constitution to carry the strain of production. The matter of special purpose and function in these animals can be understood at a glance if we consider something else beside the cow. A fine sixteen hundred farm mare is bred to say Dan Patch. Now the result might be a speedy colt once in ten thousand times, but what a wasteful way to do. Breed like to secure like. Now if the dairy herd produced two hundred and fifty pounds per cow of butter last year, then a sire that will transmit a quality of three hundred to three hundred and fifty pounds is a great advance. This quality sire may be purchased readily for one hundred to two hundred

Do your cows milk hard? Send 50 cents for teat expander. O. J. Weber Co., 225-227-229-231 East Sixth St., Los Angeles.



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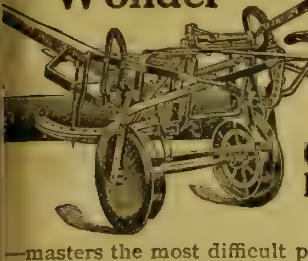

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dollars when two years old and is the proper head for the grade herd. When a sire is chosen, one that can make cows better is needed—one that can build them physically in the right direction. Choose, therefore, an animal of good quality and one that carries his breed marks. Choose him carefully and begin to slope the herd up into better production. The ascent should be gradual and not violent in any one generation. The first sire having a capacity from his ancestry of three hundred and fifty pounds a year, the first cross of heifers should give ha that will go into the three hundred pound list. Cull out the poorer ones and also the poorer ones of the mature herd and make the standard three hundred pounds. It will tal about five years to do this if everything proves successful. While a man is grading up a herd it is rather a good idea for him to buy from time to time a registered heifer calf of the same breed as his bull. The increase comes rapidly and a few registered bull calves soon pay for the heifers. Whether pure bred herds pay better than grade stock will always be a mooted question. Yet, with the American love of having the best and being on the top of the ladder there will always be those that will have nothing else.—M. E. Sherman.

SCIENCE AND COMMON SENSE.

The men who handle cows, are rarely scientific in their knowledge or judgment in regard to the animal or the conditions that surround her. Yet, if they are reasoning, observing men, they have a chance to learn a great deal. We hear a great deal among such men about "common sense;" which, if you understand it, means the sense they have. What is common sense? We spent a week once, in hard study to define it and yet it is a thing that is on the tongues of men continually. The best definition we could work out was the following:

"Common sense is the widest understanding possible, of the relation of common things and our relation thereto."

The things to be judged are the facts. In order to exercise common sense about common things we must know as widely as possible all the facts which affect these common things. Do we know them? If not, can we exercise this needful judgment called common sense.

What is science? Nothing but judgment based upon a knowledge of the facts. Does the scientist know all the facts? If so, he is the more completely a scientist. Wherein then does science differ from common sense? Nowhere, providing a knowledge of the facts and laws which govern their action is had. Some scientists excel others in strength and accuracy of judgment; they understand better the meaning and action of the facts they know. It is just the same with common sense. The same knowledge does better with one man than with another. This difference lies in the power and force of judgment.

Now the man of true common sense will never be heard sneering at science. His judgment tells him that scientists have had the opportunity to look farther into all the facts. He respects knowledge wherever he finds it. He knows that though the cow, for instance, is a common thing, yet she is surrounded by a vast number of facts that cannot be looked into and studied except in the light of science. Take the action of bacteria in milk; in the food of the cow; in the diseases which affect her which are nearly all of bacterial origin; in her surroundings. These organisms, so minute that they cannot be seen or studied except by the aid of the microscope, cause wonderful changes in all life. Indeed they change life to death. How shall common sense, unless aided by science, understand them and provide against their destructive action?

The farmer must cease sneering at science. Indeed no really intelligent farmer does that. He must see that scientific knowledge is simply his knowledge carried farther. Of course mistakes will be made, yet the scientist makes less than the common man because of his greater training in careful weighing of the facts. Science has done wonderful things for the dairy farmer and agriculture in general.—Hoard's Dairyman.

COLOSTRUMS OR BEASTINGS.

An Illinois correspondent asks us why a cow's milk is not fit for use until the ninth milking, if that is the case. He also wishes any other information on the subject that we can give him.

The beastings, or colostrum, which is the scientific name for the liquid secreted by the milk glands both before and immediately after calving, possesses peculiar chemical and physical properties, but after the lapse of three days from calving assumes the properties of ordinary milk. It is a food specifically prepared to meet the wants of the young, not merely of the bovine tribe, but of every class of mammalia or animals giving milk.

During the first hours after calving it is very rich in solids and contains large quantities of nitrogenous bodies, of which about one-half are in a state of suspension. It has only a trace of milk sugar, but in its place small quantities of other kinds of sugar. It has about the same amount of fat as ordinary milk, has rather more mineral matter, is of a yellowish or brownish color, has a peculiar smell and a slightly salty taste.

It is the most convenient and the only kind of nourishment for the young calf, and it should on no account be deprived of it. It exercises an especial action on the intestinal canal, has a high nutritive value and is not suited for the dairy. In fact, it is a powerful aperient and tonic. Without the first milk, the calf never does so well. The calf should have the first milk of its own mother, which is specially prepared for it. It is nature's prepared food for the individual calf and fit for nothing else.

It was the custom in our boyhood not to use the milk for nine days. This waste is not necessary, as the milk after the fourth day, at farthest, if the cow is healthy, has assumed its normal condition. This, however, is no reason why the calf raised by hand should be deprived of sweet milk as soon as it is fit for other purposes. It should have only whole milk for nine or ten days, and then gradually be accustomed to skim-milk.—Farmers Tribune.

Sugar Beet Pulp takes place of green grass as a milk producer. 40c per ton. Los Alamitos Sugar Factory.

Anthrax Cure, Milk Fever Outfits. See O. J. Weber Co., 225-227-229-231 East Sixth street, Los Angeles.

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A complete line of Nursery Stock. Special prices on Peach, Plum and Apricots. It will pay you to let us figure with you before placing your order for Spring planting. All stock guaranteed true to name.

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Small Fruits and Vegetables

STARTING ASPARAGUS.

THERE are two methods of starting an asparagus bed, by propagation and by the setting out of crowns of roots.

It is very difficult to distinguish between the varieties, and doubtless many varieties come from one bed, when ordered from unscrupulous seedmen.

The growing of one's own plants is the most judicious, as the year before the working of the soil for the asparagus enables the putting of the soil in the most friable condition.

Theer are certain objections to growing one's own seed, but nevertheless it is the most profitable way. When the young sprouts appear in the spring the earliest and most desirable should be marked by stakes and when the seed appears early in the season it should be picked and placed in bags to dry.

Those selected stalks should be in bunches where it is possible that they may be easily pollenized. They should be allowed to sprout up ahead of the others in the bed so that they may be easily harvested.

It has been found that the top ten or twelve inches of the stalk does not produce the best berries or seeds, so this portion should be cut early to send the vitality of the plant to the lower branches.

Another discovery by the German scientists is that the male plants are strongest and earliest in appearing as there is not much of their vitality used in the production of seeds.

The stalks for seed production can be harvested, stored away and kept until the picking, cleaning and preserving of the seed can be done carefully.

The light seed can be separated in water for a few days to loosen the skin and pulp which is afterward easily removed by rolling in the hands. The seeds are then placed on paper to dry and should be planted within two years.

The seeds should be planted in rich, sandy soil, about one and a half inches deep in rows one and a half feet apart and the plants not closer than two inches in the row.

Very much depends upon the selection of the plants. For the most strong, healthy plants it is desirable to obtain a large one year old crown with well developed buds and plenty of roots.

The soil most suitable to the asparagus plant is a light sandy soil with a fair amount of fertility in it.

Heavy soil on which water stands, or soil in which the ground water is near the surface, is not desirable. It should be light, easily worked, and free from roots, stones or any trash which will hinder the growth of the spears.

The slope of the field should be enough to carry off the surface water. A southern exposure is most desirable, because any other means shade some portion of the day, and that is not what the asparagus will do best in.

Freedom from weeds is as necessary as fertility, and the fertility can be acquired by the heavy applications of manure as mulches. To the end that the weeds may be few, a hoe-crop for two years before planting asparagus is well.—Ex.

GOPHER POISON.

In a late number of Field and Farm, D. E. Lantz says, "pocket gophers are easily poisoned. They are very fond of common potatoes, sweet potatoes, apples, raisins and prunes. The presence of strychnine, arsenic or other poisons does not seem to deter them from eating the food but if the poison is sweetened they seem to eat it more readily. The poisoned food being introduced to the burrows below the surface, there is no danger of poisoning stock. It might be well, however, not to let swine run in the alfalfa fields for a time after the poison has been put out.

"The following method of introducing the poison is recomended: Cut the potatoes or other food into pieces not more than three-fourths of an inch in diameter. Cut a slit in each piece and with a point of the knife blade insert a little sulphate of strychnine, as much as half the bulk of a grain of wheat will answer the purpose. The moisture from the potato will cause the poison to adhere to the blade. Having prepared the bait in sufficient quantity, go to the field armed with a round, sharp-pointed implement an inch or an inch and a half in diameter and of sufficient length.

"We use a spade handle shod with an iron point. A bar is attached about 15 inches from the point to enable the operator to use his foot in pressing it into the soil. This tool has proved quite serviceable. With it it is only necessary to find the runway of the gopher. The handle is sufficiently thick to make a hole large enough to permit one to drop the poisoned potato directly into the burrow. The operator then passes to another place, leaving the hole open. No digging with a spade or other hard labor is necessary. An experienced person can distribute poison to many acres of alfalfa in a day and if proper care is taken to rightly distribute the bait it will not be necessary to go over the ground a second time.

"Some experience is required to enable one to find the burrows quickly. It is best to insert the food as near as possible to the freshest mounds of earth thrown up by the animals. Two or three pieces of potato at that place are worth many scattered in other parts of the runway. The operator should avoid the larger mounds and those that are not freshly made. In various experiments with strychnine poison for pocket-gophers no difference has been found in the results when different foods were used. Irish potatoes, sweet potatoes, raisins and prunes have all been successful baits. In no case is it necessary to go over the ground a second time."

GOPHERS.

We have done considerable experimental work at this station regarding the extermination of gophers with various devices, such as spring guns, fumigation, etc., but have found the strychnine poison to be most successful. Our plan is to take small cubes of carrot, slit with a knife and put in a few grains of strychnine, and throw these in the runways, or treat raisins in the same way, as gophers are very fond of raisins.—Portland Oregonian.

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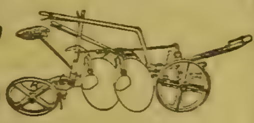

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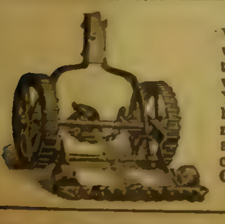

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The Ornamental Garden

BEAUTIFY THE FARMS.

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As one drives about the country among farmers, he will notice the great difference there is in the appearance of the farmsteads. Very many naturally beautiful places are unattractive because of the neglect of the owners to fix them up and adorn them with trees and shrubbery, making them neat and attractive farm homes, which should be the rule everywhere. Of course, there are cases where the owner has become old and feeble or is an invalid, where this can not be attended to, but it can usually be done if the owner has a wish to have an attractive home. Some of our native trees make beautiful ornamentals for the home and cost but the time of setting out, besides a very little pruning now and then. Paint, too, should be used much more freely than it is. True, it sometimes seems at first thought as though it costs too much, but the fact remains that at its greatest cost it is economy to paint the buildings and keep them well painted, because of the preserving qualities to the wood work, and this is in no way considering the greater beauty of the home, which, of itself, is of great importance.

I would like to have every reader of Farm and Ranch take a trip through New England, as I have done, and notice the many sets of farm buildings, all painted white, and see what a beautiful appearance they make, with everything about the premises in snug order. It looks bad to see all sorts of farm implements standing abut the farmyard and fields for weeks and months after being used, and it is the poorest kind of economy. I have always made it a practice to have all implements housed when not in actual use. There is seldom a night that finds any of my tools unprotected by a roof, and they last much longer than do most of my neighbors' tools. I like to have my tools in the best condition possible, and it annoys me very much when they are not well cared for. A farmer needs to be something of a mechanic and constantly have a watchful care over his implements, to see that no bolt or nut gets loose or lost, thus causing a breakdown. He can also, if he has a knowledge of tools, do much repairing, and thus keep the place looking neat and in better shape than if he had to depend entirely on hired help.—Farm and Ranch.

Well-rotted stable manure with four or five shovelsful of bone meal to a barrow-load, will prove an excellent fertilizer for all general purposes for lawns, flower beds, roses, shrubs, etc. But for hastening growth, preventing weeds and correcting deficient soils, the chemical or "commercial fertilizers," as they are called, are much to be preferred.

A STRANGE TREE.

We recently had the pleasure of seeing the seed pods of a very peculiar tree growing in the grounds of Mrs. G. H. Wadleigh of Los Angeles. It is known as the Jaapnese Varnish Tree, or sometimes, Chinese Parasol Tree, and technically as Sterculia plantanifolia. This tree has attracted much attention and seemed to be known only to occasional Japanese who saw it and called it simply the "Keegee Tree." The tree is deciduous, has a very large three to five lobed leaf, blossom stalk with many branches on the end of which are leaf-like pods containing from one to five carpels the size of a pea, together with a liquid which disappears before the pod is ready to open. The pod then takes on the appearance of a leaf, the carpels clinging to its edge. This leaf is entirely different in form, however, from the leaf of the tree, which has a span of nearly 10 inches, while these leaf-like pods are only two to three inches long and about an inch wide. Regarding the tree Bailey's Cyclopedia says:

"Strong growing, smooth bark, round-headed tree of medium size, deciduous foliage, leaves very large, flowers small, greenish, with reflexed calyx lobes in terminal panicles. The trees are said to be natives of China and also of Japan." One botanist maintains that the Japanese tree is only an introduction through Korea of the Chinese. "The tree is now frequently found from Georgia south, excellent for lawns and shade."

CUT WORMS.

The North Carolina station sends out the following on cut worms:

Remedial measures are to protect the young plants with bands of stiff paper or cardboard pressed into the soil surrounding the plants. They need not be over one and a half inches above the soil, as cut worms seldom climb.

Poisoned bait may be put out for the worms. To make the best use of the bait, clear off all vegetation, leaving the worms no other food. Mix a pound of Paris green or white arsenic with forty pounds of corn meal, moisten with water to a rather stiff mash, and sweeten with two quarts of common molasses. Apply this bait at sundown in little heaps near the plants to be protected. Of course, no poisoned bait should be used if chickens have access.

REMEDY FOR BORERS.

Where the trees have a rough bark remove all the projections by scraping with some blunt instrument, says American Cultivator. Then scrub the trunk and the lower part of the limbs with a mixture made by mixing one quart of soft soap or one pound of hard soap with two gallons of water, and after the mixture has been heated to boiling point add one pint of crude carbolic acid. A small amount of Paris green and lime may be added to this, if desired. With the scrubbing brush apply this mixture to the trees late in May or early in June and then twice at intervals of two or three weeks thereafter. The object of these applications is to prevent the laying of eggs and the hatching of grubs.

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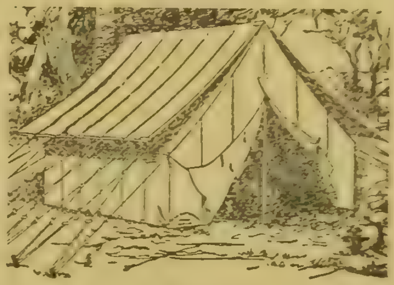

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A Protest and a Promise.

In active life the pendulum is never stationary—it either indicates development, a positive consideration; or it shows a decline, a decadent state. Indeed, in a man-made universe of business, we are all succeeding or failing, the extent of the process either way being merely a matter of degree. Ceasing for the moment to discuss the matter in the abstract and treating it in the concrete based on personal experiences, it is a pleasure as well as a gratification for The Cultivator to state that its office pendulum is swinging in the right direction; that the paper has grown from an annual deficit to an annual dividend; that its advertising patronage has increased beyond its most sanguine expectations; and that its subscription list has reached beyond a total of 15,000 names. For which its present owners are not only proud but grateful. Proud in the possession of the confidence and friendship of the men and women that are extending California pomology to the four quarters of the earth; grateful in a realization that but for this support and esteem so great a growth was impossible. The addition of new blood, the acquisition of ample capital coupled with a corresponding promise of still greater and better things in the way of improvements, has forced expression to these thoughts and explains their utterance.

The Cultivator is just old fashioned enough to believe the somewhat musty proverb "That honesty is the best policy" still holds good even in an age of graft and "velvety" workers of rural populations, which gives emphasis to two things, namely, that it has never tolerated stock selling schemes, questionable agricultural land deals on the installment plan, crinoline clubs offering memberships to people who will buy 52 cents worth of subscriptions of impecunious publishers, or supplying mental pabulum on finance to the unwary; quite to the contrary, The Cultivator has ever given a liberal measure of value alike to subscribers and advertisers. Indeed, it may be pardoned for calling attention to the fact that it has excelled in volume of original matter published; its regular corps of contributors constitutes a greater number of scientific and practical men than that of all other coast farm papers combined.

Needless to add, in a modest way The Cultivator believes thoroughly in itself; it believes that it has been a force in the development of California horticulture and agriculture; it believes that our resources in soil, climate and production have scarcely been touched by the hand of man; and that within the next decade the state will experience a growth much beyond anything that has yet transpired; it has faith that the men and women who are making horticultural and agricultural history in California cannot hope too much nor dare too much; it is proud to maintain a humble position with so gallant an army of workers, being convinced that it can render a service that shall really be worth while. The Cultivator hopes to do this by being faithful to its mission—true to its ideals and a robust citizenship that shall make rural and suburban life attractive and the pride of this western country.

The Cultivator glories in the great future of the Pacific Coast, and more especially in its own California from the forest-clad hills of Del Norte to the alfileria covered mesas of San Diego. All portions of this sun-kissed land are dear to its heart. It is proud of the friendship and loyalty of its readers, nevertheless it has an ambition to grow still closer to the hundred thousand contented and prosperous people that are attached to her soil.

The men who now own and control The Cultivator bring to their duties a long novitiate in the University of Hard Knocks, both in field and factory as well as in orchard and office. In spite of that, however, they are keenly alive to the fact that one swallow will not make a summer, neither will a few people's opinions and practices trickled over the printed page make a practical farm paper. Quite to the contrary, a really helpful paper will give the best thought and practice of the most successful in rural industry. Appreciating this, they hope to lean more or less on the brains and brawn represented in their thousands of readers. As for the owners, they love what is true and good, hence will always strive for the "square deal:" in the treatment of public men and measures they hope at all times to be just and to fear nothing from without; to think a little and to act kindly and sanely. In short, to do their work by the best light as they see it from day to day.

Citrus Growers' Meeting.

The Cultivator readers will recall an article a few months ago touching upon the profitable bearing age of citrus trees. In that article the opinions expressed by growers varied, but generally they discredited the theory that the limit of profitable bearing could be placed at 20 years. The majority contended that with proper soil conditions, irrigation, cultivation and pruning, even trees reduced to low producing capacity may be brought back to profitable bearing. Many felt that our experience has not yet been sufficient to justify an intelligent answer.

Following this special article, Mr. Chas. R. Paine of Redlands furnished a couple of short articles on the subject of pruning. He maintained that the cutting out of certain worthless limbs of orange trees such as would result in giving the "shape of an inverted cone" would be beneficial. Methods for doing this and for handling the suckers which follow were also described by Mr. Paine. These articles were commented upon favorably by citrus growers, but the question was by no means settled, and the desire for more explicit information suggested the holding of a convention of citrus growers to discuss it still further. The state horticultural commissioner was appealed to to take the matter in charge. He has done so and a meeting will be held at Pomona on Tuesday and Wednesday of next week. Representative horticulturists and men trained to study scientific problems of citrus culture will be present, and a most helpful discussion of a subject as yet so little understood is expected.

The next annual meeting of the American Association of Farmers' Institute Workers will be held in Washington, D. C., November 14-16. Beginning on the last day of this convention the annual meeting of the Association of American Agricultural Colleges and Experiment Stations will convene. These are important meetings for those engaged in farmers' institute work.

Capitalizing Farming.

The farms of the United States produce an annually greater wealth than any other industrial item excepting the combined gross income of manufactories. The value of farm products last year aggregated $8,760,000,000. The gross value of products of manufactories was for foods and kindred manufactures, $2,845,000,000; iron and steel and their products, $2,176,000,000; textiles, slightly over $2,000,000,000; total of all manufactured products, including the above, $14,802,000,000.

The use of capital in these manufacturing industries is well known; the great combinations of capital have grown until they present one of the serious problems before the country. Such a combination has never been suggested in farming. To be sure some big stock ranches and other enterprises have attracted large capital, but to no such extent as in manufacturing. In addition, almost invariably, the farm is a small unit. The Review of Reviews has an article by Milton Whitney, Chief of the Bureau of Soils, in which he makes the suggestion that ultimately capital will be drawn to farming and will put it on a more economical and successful basis.

With the use of power, which will become more general on the farm, we believe the opening is here for such use of capital. A large orange grower of Riverside remarked to us some months ago that he felt the time might come when the small orange grower would be displaced by large aggregations of capital. One or two large orange properties in California producing the best of fruit in orchards run most economically, give some color to the thought. May not the small fruit grower realize this and the advantages to be secured from having at the head of his undertakings the highest intelligence? May there not be a combination of properties under one management?

The citrus growers have proved that one manager of marketing operations is vastly superior to every man managing his own. One great obstacle will be the reluctance of the farmer to relinquish his hold upon his own property. For greater production less expense is required. Let our farmers study how this may be done.

Importing Florida Plants.

Nearly every week the Cultivator receives letters from subscribers asking names of nurserymen in Florida or containing request similar to one received this week, "Where may I secure a certain plant? I have catalogue of a Florida nurseryman, but wish to get plants nearer home." These inquirers are evidently ignorant of the regulation of the state horticultural commission that nothing with green leaves can be received from Florida. Even seeds have been quarantined. The existence of this ruling and the necessity for it should be known to every fruit grower in the state. It was made because of the danger of introducing whitefly, one of the deadliest pests of citrus trees. Several infestations of this insect were found at one time in the state and thousands of dollars have been spent to eradicate it—if it has been eradicated. If it still remains, the fight will be renewed, and we believe the pest will be controlled.

Agricultural News Notes of the Pacific Coast

Northern California

The Ferndale Fair is on this week.

Chico is affected by a plague of mosquitoes.

Ukiah, Mendocino county, had extensive forest fires last week.

The University Farm at Davis has several new buildings under way.

A farmers' institute will be held at Gridley, Butte county, September 20.

Corning, Tehama county, estimates 700 tons of peaches as its output this season.

Sutter county vineyards show active work in drying Thompson seedless.

Shasta county is making a fine exhibit of its products in the Ferry Building, San Francisco.

Pickles and oil to the value of $100,000 will be produced by the olive groves of Corning.

The supervisors of Butte county served notice on irrigators not to waste water on the public highways.

The State Fair, together with the festival, Dawn of Gold, is attracting great crowds to Sacramento this week.

Rice production in the Sacramento Valley still looks attractive and experts declare that crop will be a staple.

Yolo county fruit growers have been much dissatisfied with work done by Hindus who have been tried this season.

Apple growers in the hills of Butte county report the production this year of some of the finest fruit yet shown in the state.

The demand for hop pickers in northern Sonoma county called for a special train load of pickers on the Northwestern Pacific.

Central Creamery at Ferndale, Humboldt county, is extending its branch creameries, one being as far south as San Luis Obispo.

Forest fires covering many square miles have been raging for some time near Enterprise, Butte county. For a time the town was threatened.

The harvesting of the almond crop at Biggs, Butte county, shows nuts f very superior quality and the crop y far the largest ever produced.

The California Wine Association nnounces that it will not set the rice on wine grapes this year, but will make bargains for all that may e offered.

A car of plums shipped from Vacaille early in July sold in London early a month later for $2,406. They were Wicksons and Eurekas. The reight charges on the car totaled 1,110.32.

The special session of the state legislature convened at Sacramento last Tuesday. The special work has o do with bonding the state and the ounty of San Francisco each for 5,000,000.

Superintendent Peiper of the forage plant growing experiments which he Department is conducting at hico, declares that of more than a housand forage plants tried, nothing as equaled alfalfa.

Central California

Kerman has proved itself able to produce some exceptionally fine broom corn.

W. R. McIntosh will aid in farmers institute work in the San Joaquin Valley.

The Kings County Fair will be held in Hanford the week beginning October 3rd.

Hanford, Kings county, claims the production of pears weighing 24½ ounces each.

It is claimed that this year's barley crop will be the biggest California has ever harvested.

The foothills west of San Jose were visited last week with field fires which swept over many farms.

Tulare county fruit growers are making an exhibit of their products at the state fair this week.

A carload of engines to be used largely in irrigation work was received at Porterville last week.

Wineries at Lemoore and Armona, Kings county, are now paying ten dollars per ton for wine grapes.

Over 1000 acres of grain were destroyed last week near Tulare by sparks from a harvester engine.

The Kerman creamery is engaged in introducing and selling to farmers high grade dairy cattle, already having sold 300.

Buyers of dried peaches at Hanford, Kings county, are freely paying five cents with some growers holding for still higher.

The eastern manager for the California Fruit Growers Exchange inspected the orange groves of Tulare county last week.

Valencia Heights near Porterville will have its planting of Valencias increased by 140 acres, to be planted the coming season.

Alfalfa lands near Porterville, Tulare county, are provng of great value because of the ease with which artesian wells are secured.

Raisin grape picking began in the Fresno section about August 15th, though the muscat picking was not fully on until the 25th.

The season for shipping peaches closed in Porterville last week. For over two months 15 to 20 cars of peaches have been shipped daily.

The first beets at the sugar factory at Spreckels, Monterey county, were delivered on August 15th. The factory expects to run about 100 days.

Work has been planned for the drainage of 10,000 acres of rich farm lands near Kerman which calls for the construction of twelve miles of concrete ditches.

The building of a dam by farmers in Tulare county on the south fork of the Tule river caused an action to be taken by the South Tule Independent Ditch Company to prevent the diversion of the water.

County Horticultural Commissioner Schulz reports the installation in Tulare county of a colony of parasites expected to work on infestations of mealy bug. The parasite was brought from the Philippine Islands by George Compere.

Southern California

Cotton picking is in full swing in the Imperial Valley.

Valencia growers are receiving nearly a dollar a box more than last year.

Orange county reports one sale of the coming season's walnuts at 13 ¾ cents.

Bean threshing in Ventura county makes busy times with the lima bean producers.

The Covina Valley Farmers Club recently held a moonlight picnic and club meeting.

Bean harvesting has been completed on the big San Joaquin ranch in Orange county.

Small white beans are being delivered at the warehouse in Saticoy, Ventura county.

Escondido is making preparations for her agricultural fair to be held September 27-30.

Puente, Los Angeles county, is shipping a carload of beets a day to the Chino sugar factory.

Walnut packing houses and their equipment are being made ready for the fall pack of nuts.

Orange county apricot growers are winning step by step in their fight for fair prices for dried cots.

The state fertilizer inspector visited Redlands last week taking samples of fertilizers offered for sale.

Pomona is planning for a great meeting of citrus growers to be held on September 13th and 14th.

Arlington, Riverside county, is to have a modern creamery plant conducted along co-operative lines.

Some walnuts have already been gathered, but the season will not be fully on until about September 15th.

The Rivera Fruit Association reports 113 cars of oranges shipped this season as against 167 last year.

The Palo Verde Land Hearing case has resulted in the recognition of the rights of those who had filed on the claims.

The county game warden of San Bernardino county received and liberated in the mountains last week 30 wild turkeys.

Less than 1000 cars of Valencias remain to be shipped. The output will prove to be about 25 per cent. lighter than last year.

Glendora, Los Angeles county, Citrus Association, shipped to President Taft a box of fancy Valencia oranges packed in an oak box.

The Santa Ana Valley Irrigation Company has just purchased a ranch near Olive for the purpose of securing a number of valuable wells on it.

One of the biggest ditch contracts yet let in Ventura county was by the American Beet Sugar Company for a $19,000 ditch to carry waste water to the ocean.

Preparations are under way for a most important convention to be held in Los Angeles October 3-8. It will have to do with the physical and chemical conditions of the soil of Southern California.

The Coast

Bluestem wheat at Spokane is now quoted at 87½.

The first hops were picked in Yakima, Washington, on August 29th.

The first lot of 1910 hops delivered at Portland, Oregon, was on August 24th.

Palouse county, Washington, boasts of wheat standing over seven feet high.

The Territorial Fair of Arizona will be held this year at Phoenix, November 7-12.

Columbia county, Washington, is shipping grain at the rate of 25 cars every day.

Tomatoes and melons at Dayton, Washington, were killed by frost August 25th.

Eureka Junction, Washington, reports the grain output as fair with quality excellent.

Western Canada will produce in excess of 100 millions of bushels of wheat this season.

The Milton-Freewater section in Washington is averaging fifteen cars of high-grade fruit daily.

All harvesters at Colfax, Washington, have come in from the fields and the year's harvest is ended.

Governor Hay of Oregon has urged all sawmills to close down and use every effort to subdue forest fires.

Several arrests have been made of those charged with being responsible for the forest fires in the Northwest.

Harvesting at Harlowton, Montana, is completed and both irrigated and dry farm crops are reported excellent.

Farmers at Palouse, Washington, are being offered only 74 cents for wheat delivered in warehouse. This they are refusing.

Farmers at Dayton, Washington, estimate that they have lost $145,000 because of decline in price of wheat which they were holding.

Alligator farming is becoming very profitable in the island of Mindanao and many skins are shipped to the United States for manufacture.

After more than 300 people have lost their lives in the forest fires of the Northwest, improved weather conditions have aided in bringing the fires under partial control.

A thorough canvass of the hop ranches in Salem Valley, Oregon, shows the crop will run from 95,000 to 105,000 bales. An effort is being made for cleaner picking than has ever been given to hops in that valley.

A departure was made in hay production at Pullman, Washington, this year where timothy has been the standby. Owing to the drouth, much wheat seeded for grain was cut for hay and the experiment is proving successful.

The next Dry Farming Congress will be held at Spokane, October 3-6, and rumor has it that Los Angeles will make an effort to secure the convention for 1912. It is conceded that Colorado Springs will have the congress for 1911.

Coulson's
EGG FOOD

If you were going to erect a large building, you would consult an architect—if you wanted some legal papers drawn up, you would go to a lawyer—because these men have made a special study of their respective professions.

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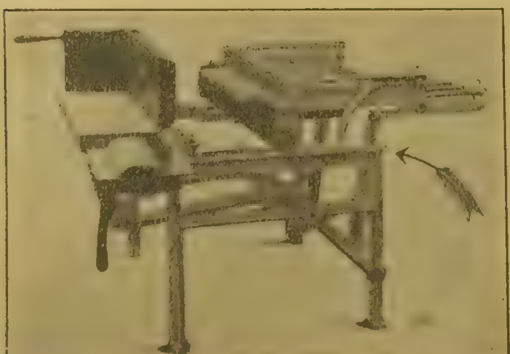

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Profit in the Poultry Yard

A PLEA FOR BETTER FOWLS.

POULTRY raising should be one of the farmer's most profitable lines, but as conducted today it yields little profit and in many instances is an actual loss. How can this be changed and farm poultry made to not only pay its way but yield a fair profit to the farmer? Simply by giving the chickens as careful attention as the horses and other live stock receive—by studying their needs, housing properly, feeding a balanced ration and keeping houses and yards in sanitary condition.

"But," says the farmer, "I haven't time to fool with the chickens."

Yet he has time to fool with the cows, the hogs, the horses, though they yield a lower percentage of profit than the chickens.

Lack of time is a poor excuse for neglecting the poultry. A flock of one hundred hens need take up but little time and yet be well cared for, but it requires some system. First, the houses must be built so that they may be conveniently cleaned, therefore the simpler the construction the better. Make the sides tight and of smooth lumber. The floor should be of earth. If the ground is not naturally gravelly put in a 12-inch layer of gravel and cover it with sand. Keep it well covered with straw. Some poultrymen prefer board floors, but I have found that they are more apt to be damp and are harder to keep clean than dirt floors.

Perches require frequent oiling or painting with lice killer, so for convenience must be made either removable or hinged to the wall. I have mine hinged, and when cleaning out the droppings I simply raise the perches and hook them against the wall. Heavy breeds of chickens should have perches not over two feet from the floor, as flying from higher ones often causes "bumble-foot."

And another point—don't make your perches ladder fashion for any breed. Set them all the same height, for if you don't every hen will try to perch on the topmost roost, which causes undue crowding.

If nests are placed in the roosting room see that they are where they will not become covered with droppings. An excellent plan is to have them along the wall beneath the dropping platform. Let the wall of the poultry house form the back of the nests and have it hinged, making a long door that may be raised or lowered at will. In this way the nests can be cleaned and the eggs gathered from the outside.

Now, with houses well made and conveniently arranged and feed kept handy, will the care of that one hundred hens take more time than the farmer can spare? Let's see. There's feeding in the morning. If grain is used it requires but a few minutes to prepare and feed it. A mash will take a little longer. Then the drinking fountains must be filled, the grit and charcoal boxes replenished frequently, and two or three times a week some green bone and oyster shells ground up. There's feeding in the afternoon and possibly a light feed at noon. On the average farm the amount of feed required during the summer months will be small if the fowls have the run of the farm. Insects, green food and waste grain around the barns will provide a large portion of the necessary feed.

Cleaning the houses will not require a great amount of time if it is attended to regularly. I find it best to remove droppings daily, but this is not absolutely necessary. Every second day will do, or under some conditions twice a week is often enough. The houses ought to be whitewashed once a month, and perches oiled every two weeks. The straw on the floor and in nests must be changed frequently.

With the coming of spring there will be broods of young chicks to care for and that is where extra work comes in. More care is required in feeding and there will of course be more or less trouble of one kind or another. Bowel troubles, gapes, and lice are possibilities, but with care they may be largely avoided. Brooders eliminate the gapes if the chicks are kept off the ground. Bowel trouble is caused by improper feeding. There is no excuse for losing chicks from lice.

Various little details must be looked after in the care of the chicks and hens, but they need not take so much time as to interfere with the farmer's regular work. The housewife can help in caring for the chicks, but don't put the burden on her of doing all the work connected with the poultry.

Give the hens a fair show this year. Feed and house them properly; keep a record of your expenditures and income, and see if your balance sheet does not make a satisfactory showing at the end of the year.—Successful Poultry Journal.

BORACIC ACID FOR SORE HEAD OF TURKEYS.

This is a remedy that is new to me, although it may be old to readers of the Cultivator, but I shall give it for what it is worth. Lately I had occasion to witness the almost magical effects of boracic acid solution in a bad case of swelled eye from poison oak, so when a sick turkey was reported I hailed the opportunity to test it in this. My turkey wasn't very badly affected, but there was considerable swelling around one eye and a frothy discharge from the nostril which indicated approaching trouble, so I dissolved in boiling water all the boracic acid powder it would take up, and as soon as the stuff was cool enough I applied it, full strength, just as recommended for poison oak. Next morning I could scarcely tell which turkey I had treated and a second application has not been needed, so I will pass on the item, in the hope that it may meet the eye of some one who may need the help without the delay of sending an inquiry.

The poison oak case was treated by applying cloths wet in the solution just as hot as could be borne, changing the cloths as fast as they cooled. They took the swelling and pain down in a wonderful manner.

For the turkey I simply dipped the head into the solution until Mr. Turk strangled and let him go, of course not using the medicine as hot as for human flesh—just warm, was all. Try it.—Mrs. Frank Metcalf.

A Healthy Chicken is an asset; a sick Chicken is a liability: because it is apt to give disease to others, it's therefore a loss, not a gain

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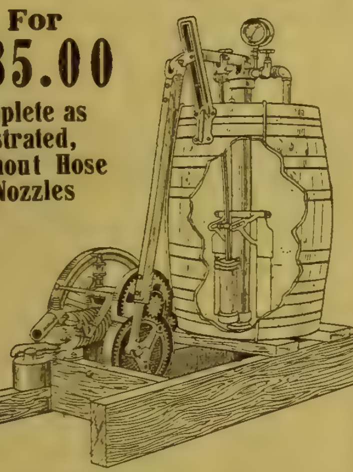

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POULTRY QUERIES.

Best Breed.

We have a letter from a San Bernardino lady who has tried two breeds of poultry side by side and finds a material advantage in one and disadvantage in the other. There are two things which prevent us from giving this letter in full. The first is that the letter, while well written, is signed merely "Subscriber," and the second is that we do not like to print articles which make direct comparisons, showing inferior qualities of any one breed. Our favorities may be spoken of as highly as actual tests prove them worthy, and we will be glad indeed if the San Bernardino "Subscriber" will send us an article, over her own name, though her name need not be published, touching upon her favorite breed, telling how young they began laying, and other valuable points.

We take this position because a single test does not prove the permanent worth or otherwise of any one variety, and, besides, a breed which one person finds inferior, another in a similar actual test, but perhaps covering a longer period of time, has found to be superior.

Cropbound.

Will you tell me why the crops of my turkeys harden for a day or so, when the birds appear sick. I feed wheat and barley, provide plenty of pure water.—Miss M. F., Orland.

We should judge that the birds have been overfed dry grain, which at times distends the thin muscular walls, exhausts and paralyzes them so that the organs cannot discharge or be emptied. A cure consists in a change of rations. Give soft foods, plenty of green stuff with a pinch of animal food. If severe, force a little castor oil down the food passage. Impaction is often due to over-feeding and subsequent swelling of grain rations.

Lice Killer.

Can you tell me in your next issue of a good lice killer for use on chickens, which takes less time and labor than a powder. Also a remedy for chicks having one side of head and eye swollen and full of watery matter.—C. P. W., Willows.

Any of the liquid lice killers to be had of the supply dealers will meet the requirements. When applied according to directions they are invariably effective. Birds are suffering from a severe cold, which, if unchecked, will degenerate into roup. Give a dozen homeopathic pellets in a quart of water. If this fails, give equal parts of cayenne pepper, ginger and mustard, mixed stiffly in lard, then flour worked in; form into pellets about the size of a hazelnut; give by opening the mouth and dropping down the throat.

FLEAS.

Answering a question in the American Journal as to control of fleas Prof. M. E. Jaffa writes:

The fowl flea, like the fowl mite, is termed a partial parasite—that is, it goes only to its host to feed, and for this purpose has a sharp, piercing mouth. From the fact that they feed only at night they are not always noticed on the fowls, still they are the cause of much irritation and loss of blood. The female flea lays her eggs amongst the dust and dirt and in the cracks of the walls and roots. The first thing to do in cases of infestation is to take everything movable out of the house, such as nest boxes, roosts, etc., and spray or paint them carefully with a mixture of thin crude oil with 10 per cent crude carbolic acid (90-95 per cent). Kerosene and carbolic is also good. The house, especially all cracks, crevices, knot-holes, etc., should be carefully painted or sprayed with this same material. A second application three or four days later is often desirable. This treatment is to free the house from fleas and keep clean. For the fowls, one of the best powders is that recommended by the Maine station. It is made by taking three parts gasoline and one part crude carbolic acid (90-95 per cent). Mix these together and add gradually while stirring enough plaster of Paris to take up all the moisture. As a general rule it will take four quarts of plaster of Paris to one quart of the liquid. The liquid and the dry plaster should be carefully and thoroughly mixed. When enough plaster has been added there should result a pinkish brown powder having a fairly strong carbolic and gasoline odor. While one application of this powder to the fowl might kill all the vermin, there are always some unhatched eggs, so a second application should be made three or four days later. The Maine station reports most excellent results with this cheap but effective powder.

Belgian "Hares."

Do you raise Belgian hares? If so, you have something that is mighty fine for meat. When you kill one, skin it so that the skin comes off in one piece, and dry it good and save it to make a fireless brooder with. It is really a pleasure to watch a lot of baby chicks nestle under a hover made of rabbit skins for they seem supremely happy and content, comfortable and warm.

Heat is life, cold is death. If you do not keep your chicken houses cleaned out, you may expect to have vermin; the more lice, the less profit. The latest on the chicken disease question is that lice, like the mosquitoes to the human family, carry disease. If your chickens get the roup the first thing that you want to do toward stamping it out, is to kill the lice. Sparrows carry lice, as do probably all birds; the writer once saw a Texas mocking bird that had just been shot, and there were lice on its head. Don't let the sparrows nest around your chicken houses. When you clean out the houses, paint the roosts with crude carbolic; have the roosts removable, so that you can get at both sides. If you find coop lice it will pay you big to spray the whole house. Lice eat up the profit and often the chickens too. Get rid of the lice.—N. W. Poultry.

Capons, generally, are dressed by leaving feathers on the neck from the head down two-thirds to the shoulders. They are also left on two first joints of wings, on tail, half way up the back, and on legs from knee joint two-thirds up the hips. All the rest of the feathers are taken off.

Some markets prefer the head of the fowl taken off at the throat. Strip the blood out of the neck; peel back the skin a little; remove a portion of the neck bone; and then, just before packing, except in warm weather, draw the skin over the end and tie and trim neatly.

Santa Ana is planning for a great Carnival of Products to be held next month.

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We don't care what your hens are doing *now*, we ask you to buy Lee's Egg Maker on our *guaranty* of an *increased* egg-production at a *reduced* feeding cost. Could we make you a better proposition?

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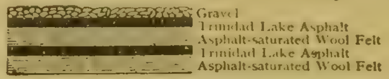

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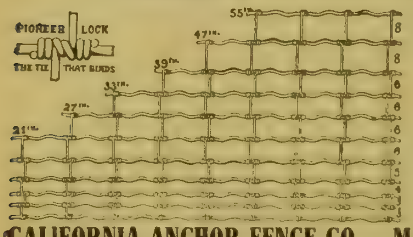

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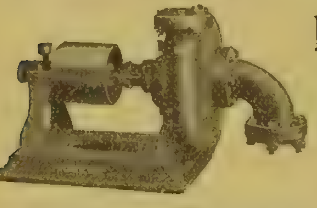

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Bees and Their Care

BEE-KEEPERS MEET.

THE Los Angeles County Bee-keepers Club met in Los Angeles last Saturday and discussed papers by Mr. Ferree of Newhall, Mrs. Acklin of Glendora and Mr. De Sellem of Hollywood. Extracts will be made from Mrs. Acklin's and Mr. Ferree's later. From Mr. De Sellem's we quote:

By Geo. B. De Sellem, Hollywood.

This is distinctively an age of organization. From the billion dollar steel trust to our local dairymen's association, we see this, and we cannot deny the influence, power, and results of thorough organization. Our own citrus fruit growers' and walnut producers' associations are of inestimable value to the individual member. Our lemon producers, though widely separated, acting as a unit through a strong central organization, have, the present season, through the Interstate Commerce Commission, compelled our transportation companies to be fair as to freight rates east on lemons, and secured for their product the advantage of the protection intended for them under the new tariff schedule. In a small way, only country-wide, this club did a great service to every apiarist in the county, for immediately after its formation, our efficient President and Secretary secured an ordinance from the county board prohibiting importation of bees from any infected district, and in addition to this, the Southern Pacific Company through its general freight agent at San Francisco, instructed its local freight agents to refuse to receive any bees for shipment to our county from infected districts, and all must have a clean bill of health. I do not know whether or not European Black Brood had appeared in the Fresno district last winter, but our reports indicated that it had, and I do know that the action of the club was timely and commendable. In my work this year I have noted with great pleasure the universally fraternal spirit of our bee people. Their willingness to assist and co-operate with every brother and sister in the business in their respective districts; the entire absence of a petty, jealous spirit among our bee-keepers everywhere, is commendable, and in the most unfortunate neighborhoods the bee-keepers were delighted to learn of a more favored district which gave promise of a surplus. I cannot lay too much stress nor congratulate you too highly on this, because, while we cannot order the seasons, we can, by united effort accomplish great things for the industry both in production and marketing. Had I the time to tell and you the patience to listen, I could spend an hour telling you how I have been assisted in my work this season by the noble men and women of our county, and how greatly this valuable assistance has been appreciated.

In the matter of the production of a good year, the bee-keepers' yards must be kept free from infectious diseases, to be profitable or to enable him to continue in the business, and this is possible only by the hearty co-operation of all the bee-keepers in the district.

We are fortunate in having as members of this club veterans in the business, men who can speak with authority, graduates of the best school on earth, that of experience, and because of this, if we are wise, we will heed their counsel. In all other lines of industry, the get-together plan seems to be the successful one. Make prices, receive bids, accept offers, make shipments, through one central house by the duly accredited agent of the association, and if this is the Shibboleth of success in other lines of trade and industry, why not in ours?—Geo. B. De Sellem, L. A. Co. Bee Inspector.

THE ANATOMY OF THE HONEY BEE.

The U. S. Department of Agriculture's recent publication, on "The Anatomy of the Honey Bee" (Bul. 18 Tech. Series, Bureau of Entomology) embodies the results of detailed studies and should prove of value as bringing to bee-keepers a fund of formation concerning an insect of such great economic importance, and also as furnishing a sound basis in devising new and improved practical manipulations. The subject has been for years the object of study of many careful students; but the popular demand for information has also induced untrained men to write accounts of bee anatomy containing numerous errors, and illustrated by drawings more artistic than accurate.

All practical manipulations of bees must depend on an understanding of their behavior and physiology under normal and abnormal circumstances and this knowledge must rest ultimately on accurate information as to the structure of the adult bee.

Following a brief instroduction the author first gives a chapter on the "General External Structure of Insects," and then taking up the Honey Bee he gives a detailed description of the head of the bee and its appendages; the thorax and its appendages; the abdomen, wax glands, and sting; the alimentary canal and its glands. He discusses the circulatory and respiratory systems, the fat body and the oenocytes, the nervous system and compound eyes, and the reproductive system. The text is profusely illustrated, fifty-seven figures, including a full page median longitudinal section of the body of worker, being used, all but three of which are new and original, having been prepared by the author with a thorough realization of the need of more accurate illustrations of the organs of the bee, especially of the internal organs.

This bulletin can be secured only from the Superintendent of Documents, Government Printing Office, as the Department's supply is by law limited to an edition barely sufficient to furnish libraries and the collaborators of the Department with copies.

The last meeting of the Santa Rosa Grange adopted resolutions urging the State Superintendent of Public Instruction to advance as much as possible the study of agriculture in high schools.

The San Jose Grange has recommended the calling of a fruit growers convention which will consider the matter of fruit standardization.

General Agriculture

WHO PAYS THE FREIGHT.

DO GOOD roads concern you? If you are one of the 30,000,000 people who live on farms in the United States, it is a fairly safe guess that you know something about bad roads, even if you do not know and have never chanced to cross the seven per cent of improved roads of the total two million miles of highway in the United States.

But if you are a city dweller, whose use of the highway consists chiefly of the street railway, does the good-roads movement concern you? That question is best answered by asking another. When the price of wheat goes up from 70 cents to $1.30 a bushel, and the price of potatoes from 50 cents to $1.25, and the price of bread from 6 to 10 cents, and the price of flour from $4.50 to $7.50 a barrel—do those facts concern you? If they do, then you are vitally interested in good roads! Take wheat, for instance! Do you know why it is possible to corner the market in wheat? First of all, because wheat is scarce—the demand growing faster than supply; but secondarily, because, owing to the condition of the roads, it is possible for speculators to get possession of the whole year's crop of wheat. The West is the great granary of the wheat supply today; and in the West wheat must be rushed to market in the clear, dry autumn days when the prairie roads are hard as flint. If the farmer held his wheat over, past the dry weather, in the most of counties he simply could not deliver during late autumn rains or early spring break-up when roads are a churn of mud. The result is, for three months after each crop, there is a glut of wheat at elevator, railroad, water-front. A large proportion of the crop goes in storage. These storage charges amount in a grain center like Chicago to as much as nine cents a bushel in a year. On Minnesota's wheat crop, storage charges mount up to $5,000,000; in the two Dakotas, to twice as much, and so for every grain area on the continent. The farmer does not pay those storage charges at water-front. The speculator does not—he adds those charges to the selling price; and the man who pays is the buyer—you, Mr. Town Man, who eat dear bread all because some mud road back in a Hoosier state has not been graded up properly.

As a matter of fact, America's country roads are so notoriously bad that it costs more to haul a ton of wheat from farm to market than to ship that ton from New York to Liverpool. America's country roads are so bad that it costs the American farmer 23 cents to haul a ton, when it costs the English or the Belgian or the French or the German farmer only from 7 to 9 cents for the same haul. You, Mr. Town Man, and you, Mr. Farmer, pay for the unnecessary waste of those bad roads, the town man by extra cost of what he eats. the farmer by lessened profits on what he sells. The same reason explains why the town man pays $1.25 in spring for potatoes which cost from 50 to 75 cents in the autumn.—Colliers.

WANTED, A PARCELS POST.

A government institution that the people want and the country needs is a parcels post. It is long overdue. We should have had it years ago. But the best things are not easily secured. They come slowly. Waiting and wanting edge our appreciation, so that when the object is gained it is suitably prized. If a general parcels post, broad enough to compel its prompt success, were to be established in this country, it would meet an appreciation and command a support that would be adequate endorsement of it as a Government enterprise in the interest of the people.

Postmaster-generals in all recent administrations have favored a parcels post. Secretly and inactively an overwhelming majority of the people welcome it; but there has been sufficient petty opposition of over-estimated power to keep it in the theoretical stage, with the hope among its enemies that it would die out. Politicians pressed for an answer as to their attitude toward the proposition have usually made promises with remote redeeming clauses, or put their constituents off with political explanations. Whatever the devices employed in answering the public's demand for this useful and increasingly necessary service, the time has come when nothing less than active, persistent, resultful effort to bring a parcels post into practical, working existence will satisfy aroused citizens.

Congress as the nation's lawmaking agent can bring a parcels post into existence if the members of that body are given orders of unmistakable urgency by the people. Farmers have it quite largely within their power to compel congressional action on the matter, and if their zeal for a parcels post accords with an intelligent understanding of its immense benefits, they will let their congressmen know what they want done about it.

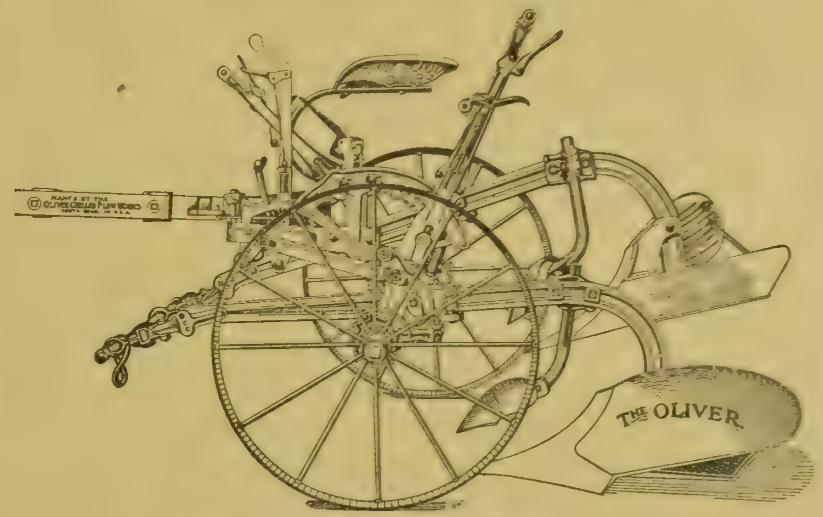
It is time to go after a parcels post with that conquering weapon with which every qualified male citizen is endowed—the ballot.—Breeders Gazette.

PER CENT OF GRADE.

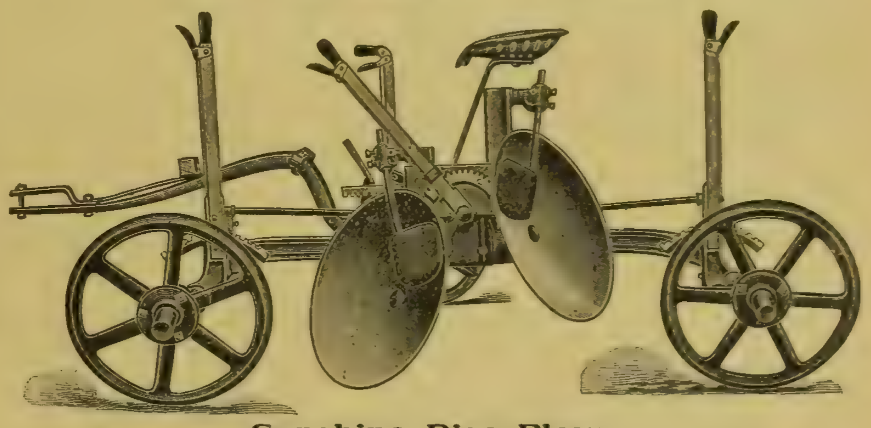
A one per cent grade on a road means a rise of one foot for each hundred feet of distance traveled up the hill. A ten per cent grade means ten feet rise in each hundred feet so traveled. A one per cent grade, then, means that in traveling up hill one mile an ascent is made of 52.8 feet, while a ten per cent grade means a rise in altitude of 528 feet in a mile. Accurate tests have shown the Minnesota Experiment Station that a horse which can pull 1,000 pounds on a level road can pull only 810 pounds on a rise of one foot in fifty, and on a rise of one foot in ten he can pull only 250 pounds. These facts show that the greatest load that can be hauled over a road is the load which can be taken up the steepest hill on that road, or through the deepest mud hole. It is therefore advised that all highways traveled by heavily loaded vehicles should be kept within a three or four per cent grade if practicable. To do this may require a change of location to get around hills, always keeping in mind that the lower the grade the larger the load that may be hauled and the cost of haulage kept at the lowest point.

Reversible Plows
For Plowing Side Hills and Level Land

No. 508-Oliver Walking Plow



No. 23-Oliver Sulky Plow



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A prolific and regular bearer of large, meaty, fine-flavored nuts, commanding from 2½c to 5c per pound more than the ordinary soft shells.

Choice trees, 3 to 14 feet, from 20c each and up; special low prices on lots of 200 and over. If contemplating planting a walnut grove, it will be to your interest to correspond with us at once, as the stock is limited and the price sufficiently attractive to clean it out quick.

Write today.

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115 No. Broadway
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Queries and Replies

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Planting Olives.

What is the best time of the year in this locality to plant olive trees in orchard? Which is the best bearing variety? In raising olives in nursery which is the best to plant for seedlings to be grafted later, and where may one procure them? Will fruit trees, and especally olives, need to be irrigated after the third or fourth year where it is only eight to ten feet to water?—N. M., Lindsay.

After the ground is thoroughly warm in the spring is the best season for planting, say after the end of March. The best bearing variety is the Mission, although other varieties have their good points. Seedlings are not used in nursery reproduction of the olive. They are usually grown from small tips in the form of herbaceous cuttings. These come true to the parent, so no budding is necessary. In a similar way they are sometimes grown from the truncheons or ripened wood cuttings which may be procured from any orchard which is known to produce good sized fruit in abundance of the kind desired.

It is possible olives would do well without irrigation on ground eight or ten feet to water, but we would prefer to be provided with irrigation water in case of emergency. Some orchards have been grown on hillsides without receiving any irrigation. These trees produce fruit, but not in such paying quantities as when irrigated. In fact one of the largest olive orchards in California is not irrigated at all.

Poultry Manure.

How far will the droppings from 500 hens yarded in orange grove go towards fertilizing 600 trees?—E. H. H., Gardena.

In our issue of August 25th, page 187, we noted that 1000 pounds of poultry would produce daily about 38.9 pounds of fertilizer. Making a close estimate of the weight of your flock, this would give you a general idea as to the amount of fertilizer scattered in the orchard. Fresh poultry droppings contain 56 per cent of water, 1.6 per cent of nitrogen, 1.5 to 2 per cent of phosphoric acid, and .8 to .9 per cent of potash. From this it will be seen that the percentage of potash is low and should be increased. As to the quantity which you should use on your trees, that depends upon soil and sub-soil conditions, so that a definite answer could not be given without examination of the soil.

Warts on Teats of Cow.

Please give method of removing warts from teats of cow.—Subscriber, Waukena.

This question was answered by Mrs. Sherman in the issue of July 7th.

Peaches Not Setting.

Some varieties of my peaches do not set enough fruit. What is the best time to prune trees to secure more fruit? Is it too late in the season now?—S. B., Long Beach.

Some pruning at this time proves profitable, but this late must be practiced with caution, and heavy pruning not indulged in. In any case, it is a little late this season, and we would advise exceptionally light pruning, if any. This will depend, however, upon the condition of the soil. If the ground is dry and the tree has become to a certain extent dormant, pruning might cause starting out of new growth and injure the tree. Light pruning of the tops soon after the fruit is removed, especially on the earlier peaches, will sometimes induce fruiting.

FLYLESS SUMMERTIME.

That summertime need not always be fly-time even beyond the pale of sewered districts is the hope-offering of Professor William B. Herms to the health promoters, bald-headed people and other individuals who have good cause to despise the fly.

Appropos of this subject Prof. Herms, whose anti-mosquito and anti-fly campaigns have made him a prominent figure on the coast, gives out the following statement: "The town that permanently abolishes all open toilets and other conditions of filth ond moisture, such as decomposing refuse heaps, accretions in garbage barrels, etc., will become flyless. House flies cannot come into existence unless they have some such places in which to breed. They seldom travel more than one or two blocks from their place of hatching.

"According to reports received by the State Board of Health it has remained for Lakeport, a summer resort in Lake county, to lead the non-sewered towns of the state in relieving its visitors and inhabitants of fly and odor evils by making the dry-earth toilet system universal and compulsory. There is no doubt that the open toilet vaults are an extreme menace to public health, chiefly due to the fact that common housefly is an

Vetch

A few tons of imported German seed remaining in warehouse at Los Angeles, also at Redlands. Will make close price to clean up.

Redlands Fruit Association
Redlands, Cal.

Fairview Farm Nursery
Small Fruit Plants a Specialty
Strawberry plants for fall planting. Ten varieties best adapted to Pacific Coast conditions.
Burbank's Crimson Winter Rhubarb
and Hybrid berry plants for fall planting. Write for catalog of above and other nursery stock.
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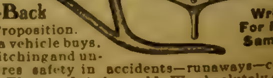

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New Agents' Proposition. Everyowner of a vehicle buys. Saves time in hitching and unhitching. Insures safety in accidents—runaways—collisions. Just out. Thousands being sold. We absolutely control the sale of this wonderful seller. $3.50 to $7 a day profit.
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abundant carrier of intestinal diseases, such as typhoid fever, dysentery and cholera infantum. These diseases are caused by specific organisms which must be carried in some way from infected matter to the food of human beings, therefore could not be caused alone by hot weather. Warm weather of course is favorable for the breeding of flies which become abundant, and this abundance is often followed by epidemics of certain intestinal diseases where water and milk are found not to be a fault. Not only are flies attracted to the vile contents of open privies but they will breed in this material.

"Odors do not escape from properly operated dry-earth toilets, and flies cannot breed in them. The change of open-vault toilets to the dry-earth system is simple and inexpensive. First fill in the pestilential vault. Put in the place of it any metallic receptacle that is movable and water-tight. A large wash tub with a rope in the handle will answer the purpose. Spread a four-inch layer of dry earth over the bottom of the receptacle and keep the contents covered with fine dirt, sand, or ashes. Large establishments sometimes put a tank on wheels or sled runners, so that the hauling may be done by horses.

"The dry-earth refuse is valuable for fertilizing purposes and will in many instances well repay the labor incident to burying it near fruit trees or depositing it in deep furrows and plowing it under.

SWEET CLOVER.

The A. I. Root Co. of Medina, Ohio, has just issued a little booklet of 100 pages on "The Truth About Sweet Clover," which touches upon its value for honey, as a green manure, as feed for horses and cattle, and also as a valuable plant in the introduction of nitrogen gathering bacteria. The booklet is made up largely from clippings from "Gleanings in Bee Culture" from 1905 to 1910; also from various other agricultural periodicals. The remark is made in the introduction that certain people have an idea that sweet clover is a noxious weed and that its planting should be restrained by law. The book protests against this belief and says: "Our experiment stations have for many years decided that sweet clover is one of the best clovers to plow under for purposes of enriching unfertile or worn out soil." We do not know whether the booklet is sent on request or not, but assume that it is.

PUMPING IRRIGATION.

Many handsome trophies, mainly in silver cups, will be offered for competition at the National Irrigation Exposition, Pueblo, September 19-October 1, this exposition being held in connection with the Eighteenth National Irrigation Congress.

Some of the cups are magnificent in their cost, in their decoration, and design, while others are simpler. All of them attest the great interest in the exposition and in the congress.

D. H. Anderson of Irrigation Age, is offering a $250 silver cup for the best exhibit of pumping machinery.

Irrigationists everywhere are turning to the increased duty of water, the economy of distribution and utilization. There are many portions of the irrigated West where pumping is essential. This is true in Southern California, in the famous Garden City district of Western Kansas, in that portion of Colorado lying east of Colorado Springs, in the state of Washington, and elsewhere. No subject at the Irrigation Exposition at Pueblo will be more eagerly investigated, it is thought, than irrigation by pumping.—R. H. Faxon.

POULTRY SHOW DATES.

North Yakima, Washington, Sept. 26-Oct. 1, 1910. Washington State Fair. John W. Pace, Secretary, Harry H. Collier, Superintendent.

Stockton, Cal., Nov. 8-12, 1910. First Annual Exhibition of the San Joaquin County Poultry Association. Eugene P. Sabin, Secretary, Stockton.

Oakland, California, Nov. 22-27, 1910. Annual Exhibition of the Alameda County Poultry Association. E. K. Healey, Secretary, Alameda, Cal. tary.

Seattle, Wash., Dec. 5-10, 1910. F. E. Barth, Secretary.

Portland, Oregon, Dec. 5-10, 1910. J. C. Murray, Secretary; M. W. Coates and Harry H. Collier, Judges.

Petaluma, Cal., Dec. 8-11, 1910. Fourth Annual Poultry Show of the Petaluma Poultry Association. H. R. Campbell, Secretary, Petaluma.

Ashcroft, B. C., Dec. 23-31, 1910. W. Maxwell, Secretary; H. H. Collier, Judge.

Tacoma, Wash, January 3-11, 1911. Frank L. White, Secretary, South Tacoma; Miller Purvis, Judge.

San Diego, Jan. 4-5-6-7, 1911. San Diego Pigeon and Pet Stock Club. A P. A. rules. W. C. McDougal, Secre-

Los Angeles, Cal., Jan. 5-11, 1911. Annual of The Poultry Breeders Association of Southern California at Chutes Park. A. H. Memler, Secretary, San Gabriel.

Colfax, Wash., Jan. 10-14, 1911. H. Rosenkranz, Secretary. H. H. Collier, Judge.

Walla Walla, Wash., Jan. 17-21, 1911 H. Dickinson, Secretary; H. H. Collier, Judge.

Jerome, Idaho, January 24-28, 1911. Wm. N. Hardwick, Secretary.

WILL START A TOAD FARM.

One million toads are to be bred by Richard Dray, a gardener from Australia and New Zealand, who arrived in New York last week. Mr. Dray has faith in the ability of the common toad to protect plant life from destructive insects, and hopes to convince the farmers that the toad is their friend. He will be the first hoptoad salesman in the world.

"It is amazing," said Mr. Dray, "that farmers know so little about the value of the common toad. I intend to start a Society for the Protection of the Toad.

"The hunger of the toad is prodigious. It has been estimated that one toad will devour in thirty days, 700 cutworms, 1,000 ants, 150 weevils, 140 ground beetles, and 600 myriapods, all harmful to vegetation. The brown tail moth also is eaten in vast numbers.

"A shilling apiece has been paid by English gardeners for full-grown toads. They are better than any artificial method for the destruction of plant-destroying insects. I do not expect a shilling each. Twenty-five cents a hundred would pay a handsome profit."—Review.

Money Making Little Liners

In this department we will insert your advertisement under a classified head for 1½ cents per word per issue. No ad accepted for less than 25 cents. Our classified columns are the clearing house for our many thousand readers.

HORTICULTURAL PRINTING.

The Kruckeberg Press, 123 South Los Angeles St., Los Angeles, Cal., makes a specialty of Horticultural Printing and Engraving. Cuts and illustrations of all standard, economic and ornamental plants on hand and subject to the use of patrons without cost. Samples and estimates cheerfully furnished. Remember, we design, write, engrave, bind and print; in brief, do the "whole thing," at no additional expense to the customer. Correspondence a pleasure.

FARM LANDS FOR SALE.

For Sale—A 20-acre farm for $20 cash and $20 a month; possession now; $90 to $125 per acre; your crops pay for the land. Rich, level land for alfalfa, oranges, almonds, grapes, cows, chickens; abundance of ditch water, for irrigation, for $1 an acre a year. Where else can you get this? In Oakdale Colony, near good town and railroad station, climate delightful. T. Wiesendanger, 207 S. Broadway, Los Angeles, Cal.

For Sale or Exchange—70 acres $2,500, 15 miles from St. Helena, joins Aetna Springs. 10 acres vineyard, fruits, nuts, berries, fine hog pasture, well watered, wood. Team, harness and spring wagon. Fully equipped poultry plant. Cow, farm implements, 7-room house, barn, granary. Owner selling on account old age. M. Fulton, Pope Valley, Napa Co., Cal.

For Sale—$6,000, terms. 20 acres sandy loam, 1¼ miles west of Garden Grove, Orange County, all growing crops. 6 acres of beans almost ready to cut, bean tools, cow, chickens, an A1 pumping plant, 100 inches water, good 5-room house, barn, windmill, tank, water in house. For this and other good buys see the Garden Grove Land Co.

For Sale—15-acre vegetable and fruit ranch in the famous Arroyo Grande Valley; 8-room house, barn, etc. Plenty of water. Good nearby markets in oil field. Price $8500, $3500 cash, balance 2 years, 8 per cent. R. M. Plympton, owner, Arroyo Grande, Cal.

For Sale—815 acres in San Luis Obispo County. A typical dairy ranch. Plenty of wood, water, irrigable land, buildings, fenced and cross fenced. Orchards, vineyards, oranges, lemons and walnuts do exceedingly well here. Forty acres of land suitable for these. Price $21 per acre. For further particulars apply to Mrs. F. A. Clink, Pozo, Cal.

2285 Acres Choice, Deep, Sandy Loam—Ideal for subdivision or eucalyptus growing. Can be cultivated any day in the year. Southern Pacific Railroad runs through the ranch. Also close to deep water for shipping. Free from wind and frost. Now all planted to grain. Price $100,000.00 for limited time. Geo. W. Sill & Co., Watsonville, Cal.

California Farms and Ranches—Consult our carefully prepared lists before settling. Can buy, sell or exchange yours for good profit. Try us. Parrish Barker, 207 Union Trust Bldg., Los Angeles.

Apple Orchards—Large and small, in the only apple producing section in California. The greatest section west of Missouri River. Write for booklet. Geo. W. Sill & Co., Watsonville, Cal.

For Sale—A 14-acre farm, good for alfalfa, orchards, or small fruit. Good market, 2½ miles from town, ½ mile from school. Frame house and barn. Price $2250. Robert Werner, Loma Linda, Cal.

Fruits, Flowers, Sunshine, Progress—All these invite investigating beautiful Hemet Valley, Southern California. Booklet free. William Kingham, Hemet, Riverside County, Cal.

For Sale—El Cajon Grant Land. In the heart of El Cajon Valley, 30 acres of choice vineyard, large house, cottage and barn; trays, boxes, etc. Close to proposed electric line. S. B. Hawley, 1548 D St., San Diego, Cal.

San Dimas Next to Get the P. E. Lines—Ward & Johnson are actual resident citrus growers in this most favored section of Southern California. We have a full list of all orange and lemon properties of all ages and prices. Write us today. Ward & Johnson, San Dimas, Cal.

The Best Buys in farm lands in Central California can be had through us. Call or write Sterling Securities Co., Savings & Loan Bldg., Stockton, Cal.

For Sale—A bargain in a 3-year-old orchard and vineyard on main canal. For particulars address Box 49, Route 2, Kerman, Cal.

Sacrifice Sale—$2,000. My ten-acre dairy and chicken ranch with all improvements. Under irrigation. D. Clayton, Colusa, Cal.

LIVE STOCK.

Registered Shorthorn Bulls and Poland China Hogs for sale. Best breeding. P. H. Murphy, Perkins, Cal.

MACHINERY.

For Sale—Second-hand windmills, tanks, engines and farm machinery that will do the same work as new at half price. Domestic and irrigating windmills and tanks; 2½-H. P. Dempster, 4-H.P., 6-H.P. Fairbanks, 9-H.P. Moore, 10-H.P. Lambert, 20-H.P. Fairbanks like new; 25-H.P. engine and mining hoist; 2-H.P. steam boiler and engine, also complete wood sawing outfit, mounted on iron trucks with a 9-H.P. engine, complete for $225. Farm and light express wagons, surrey, $35, baler, header; gang, disc, road, riding, and walking plows; weeder, cultivator, feed rack, wagons, tanks, fruit crusher, bone grinder, wheelbarrows, pipe, Fresno and Slip scrapers. Most anything a rancher wants second-hand. Demmitt Co., upstairs, 120 N. Main St., Los Angeles, Cal.

For Sale—38-H.P. White and Middleton gas engine. Now in first-class condition. We guarantee this one as we do all others turned by us. Machinery Exchange, Main and Bruno Sts., Los Angeles.

For Sale—Gas engines. A complete stock of second-hand taken in exchange. Guaranteed for one year. If you are out to save money, see us. Bailie & Brandt Co., 943-945 N. Main St., Los Angeles.

TREES.

Fine Large Eureka Lemon and Valencia Orange trees, fine for replanting. Choice lot of fine Washington Navels. Order quickly. They are going. Home 'phone 1731. John R. King, Whittier, Cal.

Fruit Trees—Get our advance prices. Choice 4-inch pot roses, 15c. Our tree specials won't last long. Get wise. Ballou's Nursery, Pasadena, Cal.

Marsh Seedless Grapefruit—600 large trees for sale. E. S. Thacher, Nordhoff, Cal.

For First-Class Valencia and Navel Orange trees and Eureka lemons, see A. G. Snow, Oxnard, Cal.

WANTED.

Farm Manager—[illegible] practical [illegible] after [illegible] 1st. Or, if preferable, would [illegible] sterling references. Address Manager, Box 34, Parker, Arizona.

Wanted—Your work pays the expense to learn a trade that pays $5 a day, in a few months' time; electricity, automobiles, plumbing, bricklaying; actual contract jobs; 200 students last year. United Trade School Contracting Company, 647 Pacific Electric Bldg., Los Angeles, Cal.

Butterman wants a complete dairy of good cows, 75 to 150, on share; party must have alfalfa and feed, good buildings. Have had 16 years' experience in business and can give good references. For further particulars apply to Henry Grandy, Wineville, Cal.

Wanted—To lease on shares from 30 to 100 acres good alfalfa ranch with plenty water and good buildings. Address A. Bader, General Delivery, Pasadena, Cal

DAIRY SUPPLIES.

Milk Coolers, Bottles, Caps, brushes, Buhl milk cans, Sharples separators, Babcock testers, veterinary instruments, wood soled boots and shoes, and our celebrated "Prosperity" washing powder. Guy F. Kelsey, 108 E. 8th St., Los Angeles, Cal.

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California Black Walnut Seed from finest, thriftiest trees in the state. Write for prices on any quantity from 5 lbs. to a ton. M. J. Crow, Gilroy, Cal.

POULTRY.

White Orpingtons—Cook Strain. We offer for sale a limited number of trios and pens of utility and exhibition stock at bargain prices for the summer season. Our breeding pens are imported direct from Wm. Cook & Sons, Scotch Plains, N. J., and are sons and daughters of first and second prize winners, Madison Square Garden. Messrs. Cook & Sons say of them: "They are all from some of the finest birds in this country." Book orders now for next season's hatching. Eggs $5.00 per 15. $25.00 per 100. Day-old chicks 50c each. October delivery. Rancho La Solana, Box 143, Chula Vista, Cal.

How to Make Money—Mrs. A. Basley's New Poultry Book is just out. It is without exception the most wonderfully complete manual on the subject of successful poultry management ever written. The secret of how to raise every turkey hatched and the "Basley Formulas," now published for the first time, are worth many times the price of the book. The "Western Poultry Book" is a practical book by a practical woman. Price $1.00. Address Mrs. A. Basley, Box 77, Venice, Cal.

Carneaux Pigeons—Guaranteed thoroughbred; original stock purchased from Plymouth Rock Squab Co., Boston. Four weeks squabs, weight twelve to twenty ounces. Breed ten times a year. Guaranteed mated and working when sold. Write for particulars. W. C. Barrett, Carneaux Squab Co., San Pedro, Cal.

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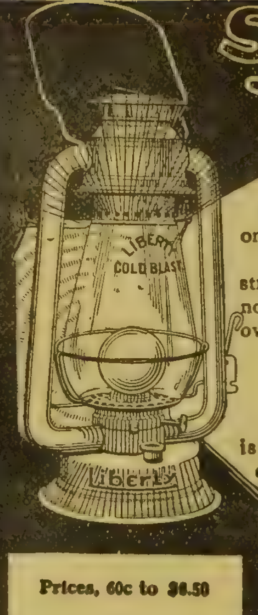

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Household Department

A BEAR STORY.

"Have you ever heard the story of 'Algy and the Bear' "? asked a boy of his father. "It's very short.

"Algy met a bear,
The bear was bulgy,
The bulge was Algy."
—London Daily News.

HER INSOMNIA.

(Scene—The dining room of a house in a Chicago suburb, at 8:30 a.m. A neat but very sleepy-looking maid is arranging the table for breakfast. Mr. and Mrs. Harberson, also very sleepy looking, enter from the hall. Mrs. Harberson sinks into the nearest chair, leans back and closes her eyes. Her husband yawns and opens the morning paper.)

MRS. HARBERSON (drowsily, as some one is heard descending the stairs)— Here she comes, now. You may serve the breakfast, Mary.

(A plump, middle-aged woman appears.)

Harberson (ironically)—Good morning, Cousin Harriet. I hope you slept well?

Mrs. Harberson (sympathetically)—Poor Cousin Harriet! I'm afraid your first night with us wasn't very restful.

Cousin Harriet (with an air of resignation, as they take their places at the table)—No, my dear, it wasn't—far from it. But a victim of insomnia does not expect restful nights.

Harberson (suppressing a yawn)—Nothing like being used to it! But last night—

Cousin Harriet (impressively)—Yes, it has been years and years since I really had a night's sleep. I never close my eyes till one or two o'clock and often not till dawn!

Mrs. Harberson—Well, it's a perfect shame! To-night you must try—

Cousin Harriet—Oh, my dear, I've tried everything—just everything! But nothing does any good! Somebody once told me to imagine that I saw a flock of sheep jumping over a gate and to count them as they jumped; but every once in a while my eyes would go shut, just for an instant; then I'd forget how many I had counted and I'd have to begin all over again. I've tried saying the multiplication table, too, but I never can be sure how many nine times seven are unless I stop to think, and, [illegible] course, you can't go to sleep whe[illegible] you are thinking! And I've tried hot baths and sleeping without a pillow and opening the window and a lunch before retiring and—

Harberson—What did you eat?

Cousin Harriet (helping herself to another roll)—Oh, everything! But it didn't do a bit of good. One night last week I ate a piece of hickory-nut cake and some lobster salad that I found in the icebox and I never closed my eyes the whole night long.

Mrs. Harberson—It might have been a little better if I had put you in the back room. Our spare room is so close to the street.

Cousin Harriet—Yes, when I do happen to drop off, the very slightest noise wakens me. I always sleep with one eye and both ears open. It's a wonder how I manage to exist with the small amount of sleep I get!

Mrs. Harberson (who has been making a constant effort to keep her heavy eyelids from closing)—Yes, one does feel so wretched after losing even one night's sleep! Now, this

AN ACT.

FOR the admission of the State of California into the Union.

Whereas the people of California have presented a constitution and asked admission into the Union, which constitution was submitted to Congress by the President of the United States by message, dated February thirteenth, eighteen hundred and fifty, and which, on due examination, is found to be republican in its form of government. Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the State of California shall be one, and is hereby declared to be one, of the United States of America, and admitted into the Union on an equal footing with the original states in all respects whatever. Section 2. And be it further enacted, That until the representatives in Congress shall be apportioned according to an actual enumeration of the inhabitants of the United States, the State of California shall be entitled to two representatives in Congress. Section 3. And be it further enacted, That the said State of California is admitted into the Union upon the express condition that the people of said State, through their legislature or otherwise shall never interfere with the primary disposal of the public lands within its limits, and shall pass no law and do no act whereby the title of the United States to, and right to dispose of, the same shall be impaired or questioned; and that they shall never lay any tax or assessments of any description whatsoever upon the public domain of the United States, and in no case shall non-resident proprietors, who are citizens of the United States, be taxed higher than residents; and that all the navigable waters within the said State shall be common highways, and forever free, as well to the inhabitants of said State as to the citizens of the United States, without any tax, impost or duty therefor: Providing that nothing herein contained shall be construed as recognizing or rejecting the proposition tendered by the people of California as articles of compact in the ordinance adopted by the convention which formed the constitution of that State.—Howell Cobb, Speaker of the House of Representatives. William R. King, President of the Senate pro tempore.

Approved September 9th, 1850, Millard Fillmore.

morning I can hardly hold up my head.

Cousin Harriet (looking keenly at Mrs. Harberson)—Don't tell me you are beginning to be troubled with insomnia? (Turning to Harberson.) And Clarence, too! I declare you both look as though you hadn't slept a wink.

Mrs. Harberson—Oh, no, indeed! Both Clarence and I usually sleep very well. But last night—

Cousin Harriet (mournfully)—You poor child! It will grow on you. That was the way I began; just an occasional bad night. And people are so unsympathetic about insomnia!

Harberson—Nonesense, Cousin Harriet! We haven't got insomnia! It was the fire engines.

Cousin Harriet (puzzled)—The fire engines?

Mrs. Harberson—Of course, no one could expect to sleep last night.

Cousin Harriet (blankly)—I don't see why.

Harberson (leaning forward and looking, all at once, very wide awake)—Do you mean to say, Cousin Harriet, that you didn't know the house and barn across the way burned to the ground last night?

Mrs. Harberson—And that, the street was full of fire engines and yelping dogs and shouting people from 12 o'clock till dawn?

Cousin Harriet—You don't really mean—(Getting up and going to the window.) Impossible! (Looks out, appears slightly confused, but recovers herself.) Well, well! I suppose I must have dozed a little toward morning!—Exchange.

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FOR THE ECONOMICAL GIRL.

"Take care of the pennies and the dollars will take care of themselves," is a trite saying, and when a girl has learned to take proper care of her clothes she saves many a dollar, for they not only look better, but last twice as long. If your nice parasol is worn down the seams, sew narrow strips of velvet down each seam and sew three or four rows around the edge; and if the cover is worn, rip off the old cover and cut out one section for a pattern and make a new cover of sateen or any preferred material.

Clean your white shoes with gasoline and let them stand for an hour or two, then wash them with peroxide of hydrogen and place them in the sun. White kid shoes may be colored black with any good dye by applying it with a brush, and when dry, the shoes can be given a coat of black shoe polish.

You can have nice cuff links by buying four pretty buttons and sewing a small cord through the shanks of two of them and then working over the cord with thread to match the buttons, and one may have a pair of links for every shirt waist if desired.

Fine white waists last twice as long if they are rubbed lightly in the washing, and they need very little rubbing if they are put to soak in warm suds in which a little borax is dissolved, as this softens the water and whitens the fabric, and the borax suds is excellent for washing the pretty ginghams and muslins, as the borax helps to keep the color in the goods and there is nothing better than this suds for washing the chamois gloves. After washing them clean through this suds, they should be rinsed through a light suds, so a little of the soap can be left in the kid to keep it soft.

Artificial flowers and straw hats can be made to look like new by dissolving some water color paint of the desired color in gasoline and painting them with a paint brush, and sometimes the addition of new leaves which can be bought for a trifle will give the flowers a fresher appearance. To freshen black hats that are beginning to grow rusty, simply brush them over once or twice with the liquid shoe polish, then leave them to dry. Use the tan polish to freshen tan hats.—M. A. T.

DO NOT LEAVE FOOD AROUND.

If food is left within reach of a patient from one meal to another in hopes that he may become hungry and eat, it will disgust him so with the sight of it that he will not eat anything. Patients have been made to go with insufficient nourishment for days at a time simply because the continuous sight of the food nauseated them. Let the food be brought at meal time without consulting the patient beforehand, as to whether he wants anything or not, and let it be taken away if uneaten at the right time. Never leave soiled dishes around, for the sight of them is unpleasant and disagreeable to a well person, and to a sick person it is simply disgusting. If the sick person can feed himself then let him be alone while eating, but if he must be fed, the person who feeds him must avoid talking.

A HAPPY THOUGHT.

"Let's go to the theater."

"I've nothing to wear."

"Then we'll go to the opera."—Lippincott's Magazine.

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251 South Main St., Los Angeles, Cal.

San Francisco and Los Angeles Produce Markets

Los Angeles Markets

LOS ANGELES, Sept. 7, 1910.

Butter.

Butter stands exactly as last week, and notwithstanding almost 80,000 pounds receipts some days market remains firm.

Price to trade 2½c in advance of the following Produce Exchange quotations:

Extras	32½
Firsts	31
Cooking	25

Cheese.

Northern fresh	17@17½
Anchor, large	18
Oregon Daisy	18½@19
Imported Swiss	30
Domestic Swiss	22@23

Eggs and Poultry.

Eggs are rapidly advancing and Tuesday saw a sensational advance from 39 to 43 cents. Even at the advanced price all offerings are quickly picked up.

Paying price f. o. b. L. A. is:

Local ranch candled	43
Case count buying price	38
Eastern fresh	32
Eastern storage	28@30

Dealers pay for live poultry f. o. b. L. A.:

Hens, per lb	17@19
Roosters	8@16
Broilers	17
Fryers and Roasters	17@18
Turkeys	25@26
Geese	11
Ducks	16
Squabs, per doz	1.50

Live Stock.

Hogs are again advancing and a half cent higher quotations are noted.

The following quotations are f. o. b. Los Angeles, on all stock:

Hogs, 175 to 200 lbs	9½
Prime Steers	6
Heifers	4@4½
Calves, per lb	5½
Sheep ewes, per head, shorn	4.00@4.50
Lambs, per head	3.50
Wethers, shorn	4.00@4.50

Potatoes.

Wholesale prices are:

Local Burbanks, ctl	1.50
Highlands	1.25@1.50
Salinas	1.65
Sweets, Yellow, per ctl	1.75

Onions.

Wholesale quotations:

Yellow Danvers	1.40
Australian Browns	1.40
Silver Skin, per ctl	1.40@2.00
Garlic	7

Vegetables.

Wholesale quotations:

Asparagus	15
Artichokes, northern, doz	1.00
Beets, sack	90
Beans, green	4
Beans, Limas	5@6
Brussels Sprouts	12½
Bell Peppers, lb	4
Green Chilis	4
Cabbage, per sack	90@1.00
Cucumbers, per box	35@50
Celery, crate	2.25@2.50
Cauliflower, per crate	1.50
Carrots, per sack	90
Egg Plant, per lb	4
Green Corn, box	60
Green Onions, per doz. bunches	25
Lettuce, choice, per crate	1.00@1.25
Leeks, per doz	35
Okra, lb	6
Peas, per lb	7
Pumpkins, lb.	1@1½
Parsley, per doz. bunches	25
Parsnips, doz. bunches	15@20
Radishes, per dozen bunches	10@15
Rhubarb, strawberry, per box	1.50
Rhubarb, crimson winter	1.00
Spearmint, doz. bunches	30@35
Spinach, per dozen	20
Hubbard Squash, lb	2
Summer Squash	35
Turnips, doz.	25
Water Cress, doz. bunches	25@35
Tomatoes lug	25@50

Citrus Fruits.

Valencias	4.00
Grapefruit	2.50@3.50
Lemons	4.00@5.00

Fresh Fruits.

Wholesale prices on the market are:

Alligator Pears	3.50@4.00
Apples, Bellflowers	1.10@1.20
Gravensteins	1.00@1.60
Greenings	1.00@1.25
W. W. Pearmains	1.10@1.35
Alexander, lug	1.00@1.50
Crabapples, lb.	3
Casabas	1.50
Cantaloupes, crate	3.00@3.50
Figs, box	1.25
Grapes, lug	60@85
Grapes, Tokays	1.25@1.50
Pears, box	75@1.00
Bartletts	1.50@1.75
Strawberries	8@10
Raspberries	10
Blackberries	9
Peaches, box	75@1.00
Plums, box	1.25@1.35
Prunes, box	1.25@1.35
Quinces, box	1.00
Watermelons, lb.	1@2

Dried Fruits.

Wholesale prices are:

Apricots	12@13
Evap. apples, fy., per lb	8½@9
Peaches	6½@7½
Pears	10@12
Nectarines	8@10
Prunes	4@10
Plums	10

Beans Dried.

Wholesale quotations:

Limas	4.75@5.00
Black eyes	5.50
Pink, No. 1	6.75
Lady Washington	4.50
Small white	4.50
Garvanzas	4.50
Lentils	7.00

Nuts.

Wholesale quotations are:

No. 1 soft shell walnuts	15@16
No. 2 soft shell	10
Almonds, IXL, per lb	17
Pecans, polished	15@16
Peanuts, Eastern	7@7½

Honey.

Wholesale quotations:

Extracted water white	8½
Extracted light amber	7
Comb W. W.	18
Light amber	15
Beeswax	30

Hay.

The rush to sell is causing a weakening, and even a lowering of hay prices. The outlook for the next few weeks is not encouraging.

Buying prices f. o. b. cars L. A. are:

Barley hay	8.50@10.50
Alfalfa	9.00@10.00
Wheat hay	10.00@11.00
Tame oat	10.00@12.00

Grain.

Wholesale selling price f. o. b. Los Angeles:

Wheat, new, per ctl	1.90@1.95
Corn	1.80
Egyptian corn	1.85
White oats	1.90
Seed Rye	2.10
Seed Barley	1.30

Feed Stuff

Wholesale selling price f. o. b., Los Angeles:

Cracked Corn	1.85
Cracked Wheat	2.05
Shorts	1.80
Bran	1.55
Oil cake meal	2.50
Feed Meal	1.90
Rolled Barley	1.25

San Francisco Markets

SAN FRANCISCO, Sept. 6, 1910.

Butter.

Butter is practically as last week with firm conditions.

The official quotations of the San Francisco Wholesale Dairy Produce Exchange for today are as follows:

California extras, per lb	31
California firsts	30½
California seconds	30
Dairy	28

Cheese.

California flats, new	14@15½
Cal. Young Amer. fy. new	16@17

Eggs and Poultry.

Eggs are advancing and firm at 37 for extras.

Official quotations of the S. F. Wholesale Dairy and Produce Ex. are:

Fresh ranch extras	37
Seconds	26
Thirds	20
Storage	34½
Hens, per doz	4.50@10.00
Roosters, per doz	4.50@8.00
Fryers, per doz.	4.50@5.00
Broilers	2.50@3.25
Spring Turkeys	26@30
Geese	1.50@2.00
Ducks	4.50@7.00
Pigeons	1.50@2.25
Squabs	2.25@2.50

Live Stock.

San Francisco prices gross weight:

Steers	3¾@5¼
Cows and heifers	2¾@4¼
Hogs	6@9½
Calves per lb	4½@6
Milk Lambs, unshorn	6@6¼
Wethers No. 1	4½@4¾
Ewes No. 1	4@4¼

Potatoes.

Wholesale market quotations:

River White, new box	90@1.10
Salinas Burbanks	1.25@1.45
Merced Sweets, lb	2@2½

Vegetables.

Wholesale quotations:

Artichokes	35@40
Beans, string, per lb	4@5
Beans, Limas, lb.	4@5
Cucumbers, box	35@50
Celery, per crate	90@1.50
Chili Peppers, per box	35@50
Bell Peppers	6@7
Green Corn, sk	50@1.25
Egg Plant, per box	40@50
Lettuce, per crate	4.50@5.00
Okra, box	25@40
Peas, per lb	4@5
Rhubarb, box	50@75
Summer Squash, box 25 lbs	40@50
Tomatoes	40@75
Garlic	2½@3½

Onions.

Onions, sk.	75@85

Citrus Fruits.

Valencias	2.50@4.00
Grapefruit	1.50@3.50
Lemons	2.50@5.50
Limes	6.00@6.50

Fresh Fruits.

Apples, box	50@1.10
Apples, Gravensteins	1.25@1.40
Apples, Bellflowers	1.00@1.15
Cantaloupes, crate	1.75@2.25
Crabapples	50@1.00
Muskmelons	2.00@2.50
Nutmegs	40@65
Figs, box single	40@1.00
Grapes, seedless	40@50
Grapes, Muscat	40@65
Grapes, Tokays	60@75
Grapes, wine, ton	13.00@17.00
Huckleberries, lb.	6@10
Pears	50@1.00
Pears, Winters	50@85
Bartletts, wrapped	1.25@1.75
Peaches, box, clings	65@75
Peaches, Frees	1.00@1.25
Nectarines, red	40@90
Quinces, box	60@90
Pomegranates, box	1.00@1.25
Plums and Prunes, crate	40@85
Blackberries, chst.	5.00@6.00
Raspberries, chst	6.00@9.00
Strawberries, chst.	3.50@5.00
Logans, chest	6.00@8.00
Pineapples, doz.	2.50@3.00
Watermelons, per doz.	1.00@2.00

Dried Fruits.

Santa Clara prunes	5@5¾
¾ cent premium for larger sizes.	
Apricots, per lb. Royal	10¾@13
Apples, evap.	7@8¼
Peaches	5¾@7½
Pears	9¾@13
Figs	4¼@5¼
Nectarines	5@6
Plums	7@8

Futures on 1910—Apricots, 10¾@12; Moorparks, 12@13; Peaches, 5@6½; Prunes, Santa Claras, 4½@4¾; ½ cent premium. Figs, 3@5¼.

RAISINS—1909 crop, seeded, per pkg.: Fancy, No. 16, 5¼@5⅜c; do. choice, 4¾@4⅞c. Loose Muscatels, in 50-lb. bxs.: Standard, 4-crown, 4¼; do. 3-crown, 4c; do. 2-crown, 3½c.

1910 crop, futures—London layers, in 20-lb. bxs.: 6-crown clusters, $2.25@2.50; do. 5-crown, $1.75@2; do. 4-crown, $1.25; 3-crown layers, $1; do. 2-crown, 95c. Seeded, per pkg.: Fancy, No. 16, 6c; choice, No. 16, 5½c. Loose Muscatels, in 50-lb. bxs.: Standard, 4-crown, 5¼c; do. 3-crown, 4½c; do. 2-crown, 4c. Dried grapes, 2¾@3c. Seedless—Muscatels, 3¼@3½c; Sultanas, 3½@3¾c; Thompsons, 4¼c.

Nuts.

Walnuts, S. S. No. 1	13½
Walnuts, hard shell	13
Almonds, '10 N. P. U.	14½
Almonds, '10 Nonp	16½
Almonds, '10 I X L	15½
Pecans	14@15
Chestnuts	14@15

Beans Dried.

Limas	4.45@4.50
Pink	6.00@6.25
Black eyes	5.60@5.75
Small white	3.85@4.10
Large white	3.75@4.00
Kidneys	6.75@7.00
Garvanzas	3.25
Bayo	5.50
Horse beans	2.00
Red Mexicans	6.00
Cranberry	4.50@4.75

Hops

Hops, 1909 crop	10@15
Hops, 1908 crop	8@10

1910 contracts now being made at 12@14 cents.

Honey.

W. W. Comb '10	15
Dark Comb	12½
Extracted W. W.	8
Extracted, dark	6½
Beeswax, per lb.	24@30

Hay.

Scott, Magner & Miller says:

Receipts of hay for the past six days have been 6800 tons, being over 1100 tons a day. The accumulation of last week had not yet been worked off when the heavy arrivals of last Monday were added to the burden of the market.

Conditions here have been most satisfactory in everything connected with the situation. The immense amount of hay that has been coming steadily for the last three weeks has blockaded every avenue of outlet, so that it has been the most strenuous time that we have seen for years, all along the line. It has been impossible to realize cost prices out of the hay that has been coming and the consumers, who have anticipated this situation and are taking advantage of it to the fullest extent, have been dictating the prices of the market during this entire blockade.

There has been considerable alfalfa hay arriving, but as these arrivals had been sold to be shipped north, they have not affected the market at all.

There is very little demand for straw, and very little of this article coming in. The ordinary grades of straw will not sell at all. The fact that there is so much cheap hay offering that is being used for bedding, adversely affects the straw market.

Fancy wheat	12.00@12.50
No. 1 wheat or wh and o	9.50@10.50
No. 2 wheat or wh and o	$8.50@9.00
Choice tame oat	10.50@11.50
Other tame oat	8.00@9.50
Wild oat	7.00@9.00
Stock hay	5.00@6.00
Alfalfa	9.00@12.30
Straw	40@50

Grain.

Wheat No. 1	1.57½@1.65
Barley, good to choice	97½@1.02½
Barley, poor to fair	92½@95
Oats, white	1.60@1.65
Rye, new crop	1.65@1.70
Corn, large yellow	1.55@1.60
Alfalfa seed	14@15
Mustard brown	4½
Millet	2¾
Flaxseed	5@5½
Broom corn seed, per ton	23.50

Feed Stuff.

Bran, per ton	23.50@25.00
Feed cornmeal, per ton	36.00@37.00
Cracked corn	36.00@37.00
Ground barley, per ton	22.00@23.50
Rolled oats, per ton	30.00@32.00
Middlings	32.00@35.00
Oil cake, per ton	40.00@41.50
Cocoanut cake per ton	35.00
Mixed feed, per ton	25.00@26.00
Shorts	26.00@27.00

Deciduous Market

SACRAMENTO, Cal., Sept. 3. 1910.

The following circular of the California Fruit Distribtuors gives number of cars of deciduous fruit shipped from all points in California for the week (7 days) ending Friday morning, September 2, 1910:

Peaches.

Two hundred and thirteen and one-half cars. This last week's shipment has comprised the bulk of the Salway offerings for the present season. There will be a limited number of cars offering next week, but the quantity will certainly be very much less than has been shown for the past week. It is not expected that the movement will be of any considerable volume after Wednesday.

Plums:

Movement of this fruit has been too light during the past week to be worthy of mention, being less than one car.

Pears.

Seventy-three cars. A very considerable falling off is shown in the shipment of this variety of fruit which will show further curtailment during the next seven days. As stated before, our winter pear crop is light and the shipments have now very largely gone forward.

Grapes.

Three hundred and seventeen and three-quarter cars. The Tokay movement is now in full swing and fruit is reported to be in fine condition and of better quality than usual. Growers report as they go over their vineyards that the quantity is even less than expected, and while shipments during the month of September will be of the usual volume, it is expected that the season will end earlier than heretofore. It is not expected that the movement during the next week will be much more than 50 cars per day.

Since our last report weather conditions have been very favorable to the full and perfect development of fruit.

Citrus Market

LOS ANGELES, Sept. 7, 1910.

A slightly easier tone prevails in the orange market and a depressing effect is noticed from the quantities of off sizes, greens, and dry fruit. But with the small number yet to go there is no occasion to be concerned about the market for reasonable prices must prevail.

Lemons show a very firm condition and the few to go will command the top of the market. The storing will not begin for many weeks yet because present prices will induce immediate shipment.

Shipments.

Shipments of citrus fruits since November 1st, 1909: 28,885 cars, of which 24,472 were oranges and 4,413 lemons.

NEW YORK, Friday, Sept. 2.—Nine cars were sold. The market continues strong on good fruit. The weather is clear and favorable.

VALENCIAS—	Avge.
Old Mission, fy., C. C. Chapman	$6.65
Old Mission, ch., C. C. Chapman	5.50
Golden Eagle, sd., C. C. Chapman	4.30
Aurora, or., E. Peycke Co	4.00
Luna, ev. ch., E. Peycke Co	3.55
Mars, sr. ch., or., E. Pepcke Co.	3.15
Climax, or. ch., E. Peycke Co	2.60
Titus Ranch, fy., San Marino G. P. A.	3.65
El Toreador, sd., San Marino G. P. A.	2.55
Puritan, S. B. Exchange	3.15
La Mesa, Riverside Exchange	4.35
Golden Rule, Riverside Exchange	2.90
Square, Riverside Exchange	3.60
Security, fp. or., Green Speich	3.30
Golden Flower, ex. fy., Redlands G. O.	2.10
Golden Gate, ex. ch., Red, G. O. A.	1.40
Gabriella, ex. ch., Ind. Fruit Co.	3.90
Citrus Belle, sd., Ind. Fruit Co	2.75

CHICAGO, Friday, Sept. 2.—Lemons ruled quiet. On account of cooler weather the demand has eased off somewhat. Prices lately have declined. Boxes, California choice, $4.50@4.75; extra choice, $5.00@5.50; common, $3.75.

Oranges—Offerings are very moderate. They rule quiet with about so much business every day. Boxes late Valencias extra choice, $4.25@4.50; choice, $3.50@3.75.

CINCINNATI, Friday, Sept. 2.—Weather warm. Market steady on good fruit. One car Valencias and two cars lemons sold.

VALENCIAS—	Avge.
Red C., Covina Exchange, Covina	$3.30
Cougar, Covina Exchanpe, Covina	2.85
LEMONS—	Avge.
Pet, S. A. Ex., San Dimas	$3.35
Loma, ch., Limoniera Co.	4.40
Lemon Spray	3.40
Greyhound, S. A. Ex., Sn Dimas	2.40
Centauria	4.30
Choice	2.75

BOSTON, Friday, Sept. 2.—Market unchanged. One car sold.

VALENCIAS—	Avge.
Vista Bonita, A. F. Exchange, Hemet	$3.60
Mission Indian, A. F. Exchange	2.65
Yankee Doodle, A. F. Exchange	1.10
Lake Hemet, A. F. Ex., Hemet	2.95
Eagle, A. F. Exchange	1.45

PHILADELPHIA, Frday, Sept. 2.—One car Valencias and one mixed car sold.

VALENCIAS—	Avge.
Pomona, S. A. Exchange, Pomona	$2.20
Blossom, ex. ch., Red, M. O. G. Co.	1.65
Camellia, ex. fy., Red, M. O. G. Co.	2.40
La Belle, sd., Red, M. O. G. Co.	.90
GRAPEFRUIT—	
East Highlands, AA. Brand	$1.35

PITTSBURG, Friday, Sept. 2.—Market easier on oranges account quality, steady on good stock lemons. Weather favorable. Two cars sold.

VALENCIAS—	Avge.
Pomona, S. A. Exchange, Pomona	$2.20
LEMONS—	Avge.
Homer, Q. C. Exchange, Corona	$4.35
Camel, Q. C. Exchange, Corona	3.95

ST. LOUIS, Friday, Sept. 2.—Cloudy. Market continues very much depressed. Three cars sold.

VALENCIAS—	Avge.
Puritan, S. B. Exchange, Rialto	$3.05
Yacht, S. B. Exchange, Rialto	2.05
Big R., S. B. Exchange, Rialto	2.95
LEMONS—	Avge.
Quail, O. K. Exchange, Upland	$3.85
Swallow, O. K. Exchange, Upland	3.15
Elazar, A. C. G. Exchange, Azusa	2.35
Green Crown, A. C. G. Exchange	2.95
Coyote, O. K. Exchange	2.30
Owl, O. K. Exchange	2.30
Red Shield, A. C. G. Exchange, Azusa	4.00

CLEVELAND, Friday, Sept. 2.—One car lemons sold. Cool.

LEMONS—	Avge.
Solino, fy. or., Stewart Fruit Co.	$3.60
Some Class	2.75
Symbol	3.60

HOW MANY HENS?

Continued from page 219.

feet high each, scratching pen in front of second story and roosts and nests behind. First story is all dirt floor with wire all around; second story has wire sides above the one-foot high scratching pen with board sides to rear half or roosting and nesting place. Do not like the pen. It is first rate for the hens and saves room, but I am getting too elderly and fleshy to crawl through a door 2 feet high that is close to the ground. I would build about 4 feet deep and 10 long should I build, as birds and pen would be more accessible, and easier to keep clean. Always have a spare pen so one can change at once if anything should be wrong in one of the pens. If a bird gets pecked or bloody, wash off, vaseline, and toss in spare pen for a day or so.

L. V. Peterson, Guerneville.

I don't know how many hens one acre will accommodate as my hens are all on free range. I handle White Minorcas exclusively, and think from 12 to 15 in a pen would be O. K. if you mate them to a good vigorous rooster. This number might be too many for some of the other less active breeds; probably ten would be sufficient for the latter. The size of house is not very important, so long as you don't crowd in too many hens in each house. Would recommend house partly open on side away from prevailing winds, opening to be high enough above level of roosts, so that fowls are not directly exposed in case wind should come from that direction. Cover with wire screen or netting of some sort.

Hemp Culture.

The bluegrass region of Kentucky, in the center of which lies Lexington, raises about 20,000 acres of Cannabis sativa from which hemp is procured. The acreage devoted to hemp in other parts of the United States is very small—perhaps 600 acres around Lincoln, Nebraska, and an equal number in the lower Sacramento Valley in California, with small experimental plantings in Indiana, Pennsylvaia, Wisconsin, Michigan, Minnesota, Iowa, and Arkansas.

Russia produces more for export than all other countries, but Italy, Austria-Hungary, Germany, France, Belgium, Turkey, China, and Japan grow it commercially for fiber.

All the hemp fiber produced in this country is used in American mills, and as increasing quantities are being imported, a market for a larger home production is offered. Therefore, the circular recently issued by the U. S. Department of Agriculture on the Cultivation of Hemp in the United States, in which climate, soil, sowing, harvesting the plant, and methods of preparing the soft gray or yellow bast fiber are described and explained, should prove of interest to farmers in those sections of the country outside of the recognized hemp growing region where soil and climate seem to offer a prospect favorable to its production.

TIME HUNG HEAVY ON HIS HANDS

A Chinese laundryman in Oakland, California, recently had his troubles with a watch that habitually lost time. So he took the timepiece to the nearest watchmaker.

"Watchee no good to Charlie Lee," said he, briefly, pushing it across the counter. "You fixee him, eh?"

"Certainly," said the watchmaker. "What's seems to be the trouble with it?"

"Oh, him too muchee by 'n' by," said Charlie Lee.—Harper's weekly.

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The Layne patent centrifugal pumps and patent well screen advertised in this issue of the Cultivator are things that will interest every one that has irrigation to do. This pump and screens are manufactured by the Layne & Bowler Co., Santa Fe Avenue and Violet Street, Los Angeles. They have a neat ltttle catalogue which will be sent free upon request, if you mention the Cultivator.

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Upon request we will gladly quote price on any not included in this list.

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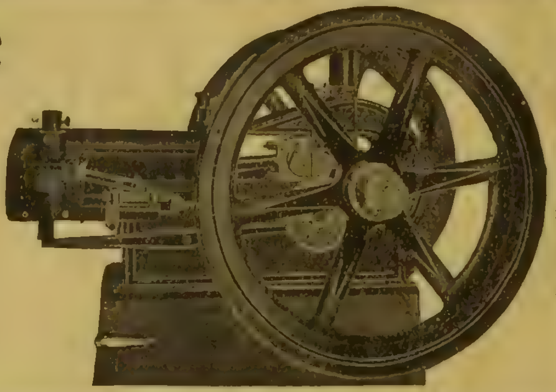

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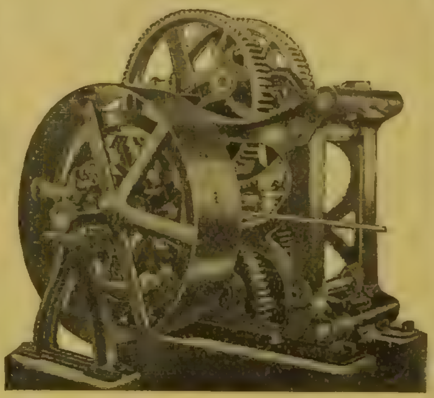

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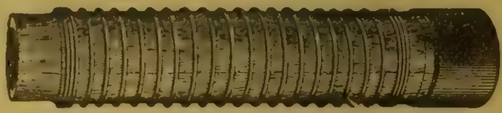

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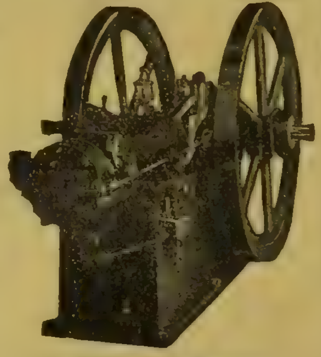

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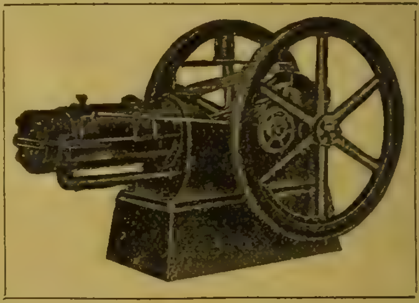

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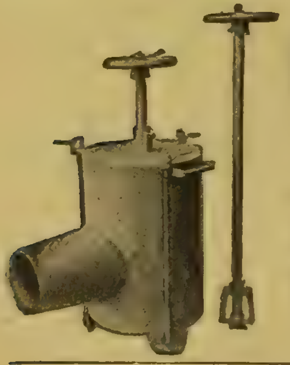

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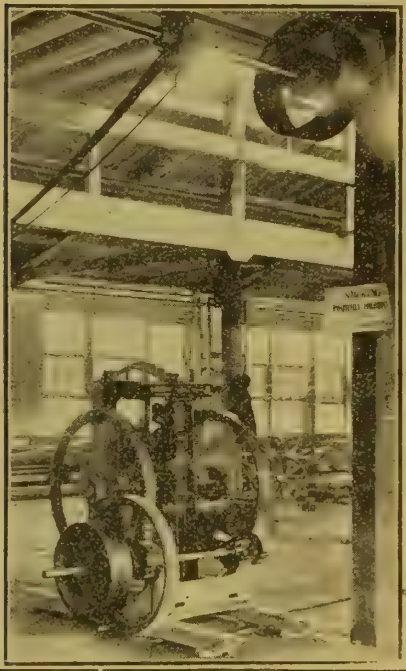

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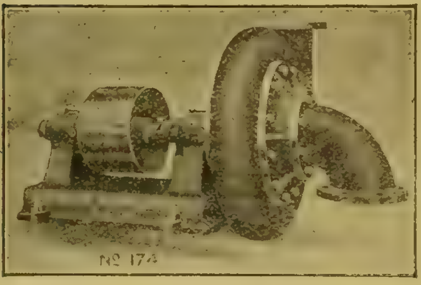

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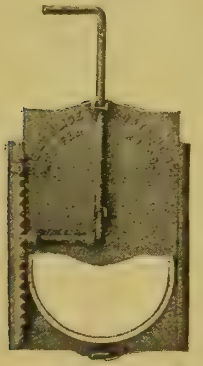

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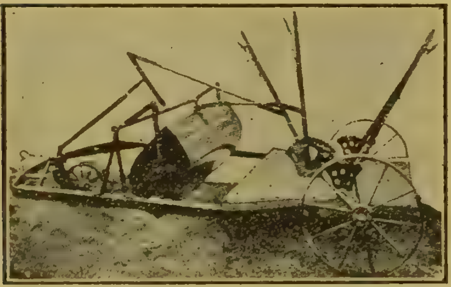

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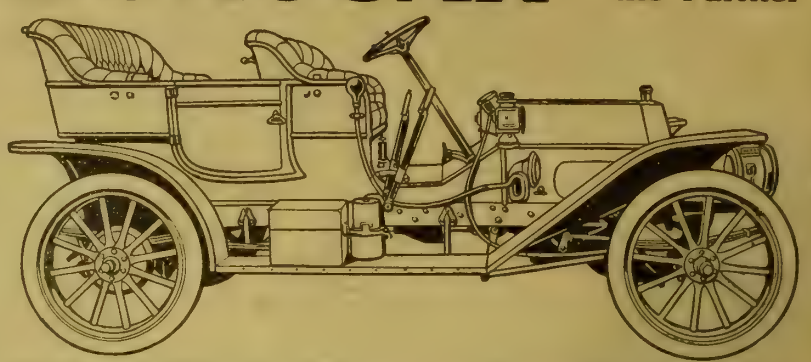

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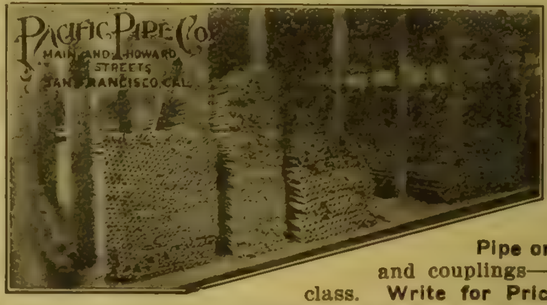

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California Cultivator

Vol. XXXV—No. 11 Los Angeles, California, Thursday, September 15, 1910 Subscription $1 a Year

One of the State's Greatest Pests--Russian Thistle

Report of Investigations Made in Ventura County by E. O. Essig, Horticultural Commissioner.

This Pest Demands Instant and Effective Work.

IN the year 1905, the State Commissioner of Horticulture of California issued a pamphlet entitled "The Russian Thistle—Its Introduction and Spread in California. With Laws and Measures for Its Control." Among other valuable things, this warning to the farmers was given:

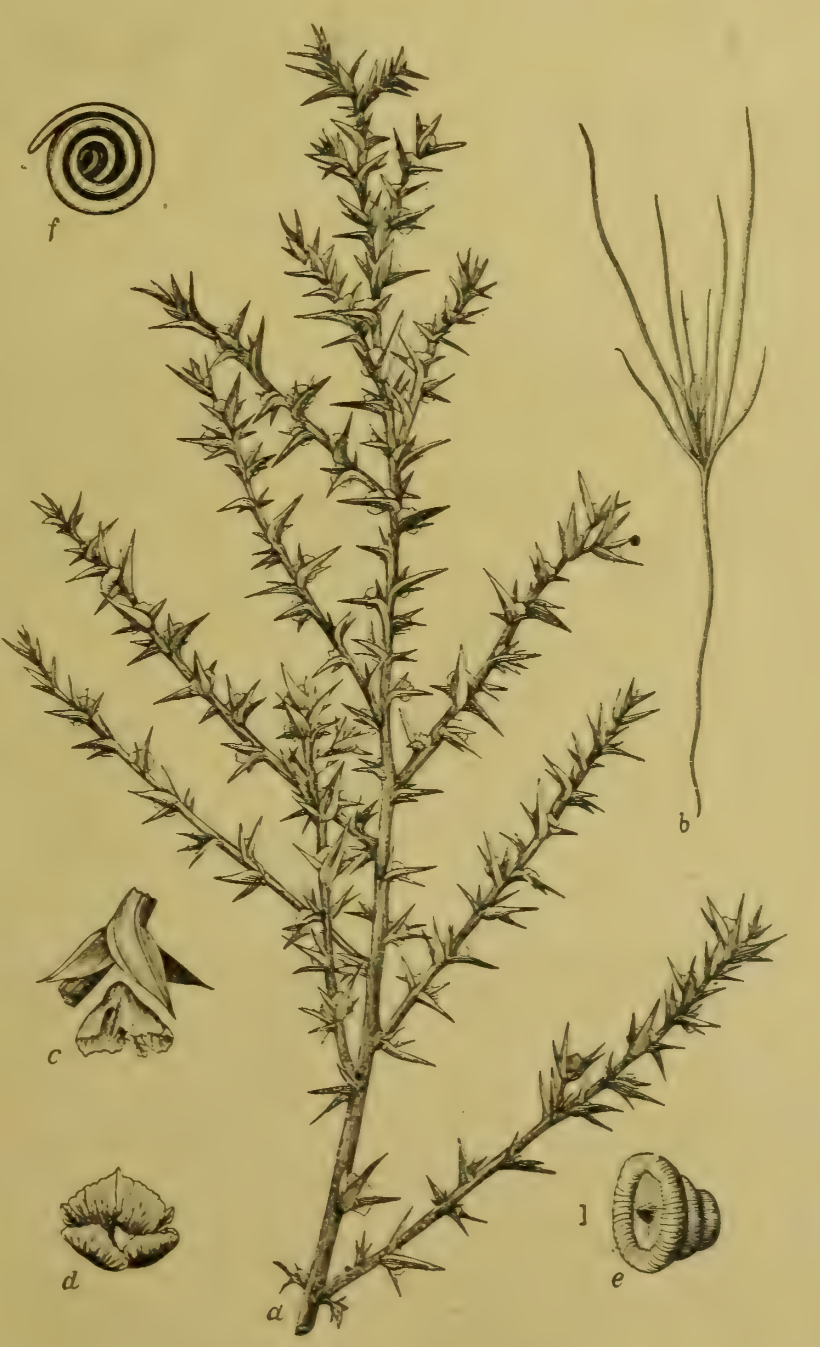
"Warning to Pacific Coast Wheat-Growers.—East of the Rocky Mountains the thistle is already so widely distributed that its continued progress in that region is inevitable. Its advent in California and Idaho, however, is a far more serious matter. The Rocky Mountains present a great natural barrier which the thistle will not easily pass, except by artificial conveyance. With the natural conditions thus favorable to its exclusion, and with a full knowledge of the disastrous nature of the scourge, it is almost criminal to allow it to become established west of the Rockies. To the Pacific Coast Sierra Nevada and Cascade Mountains afford additional protection, but some weed will be sure to find its way over this barrier also, especia if the thistle is allowed to obtain a hold in the Great Basin. In view of these facts, the California wheat-grower should take precautions against the weed, opposing both its direct introduction into California from the plains east of the Rockies and its gradual advance by way of the Great Basin."

This warning, however, came too late to the farmers of Ventura county, for the thistle is known to have existed in the Upper Simi Valley for over ten years. It was probably introduced in grain seed from the Middle States, and has spread from one small infection to various other points.

At the time of its first introduction little heed was given it by the farmers until it forced itself upon them through its destructiveness.

In January, 1910, the County Horticultural Commissioner spent some days in the Simi Valley and at that time an effort was made to acquaint the farmers with the problem which they were facing and to plan the eradication of the weed. In February a warning to the Simi farmers was published in the Ventura Free Press, and in the California Cultivator, stating therein the seriousness of the Russian Thistle and suggesting methods for its control.

Later investigations showed that only a small number of the farmers paid any heed to these suggestions, for thistle was to be found abundantly growing in the fields, orchards, along the fences, private and public roads, and along the railroad. However, the farmers in general expressed their desire to co-operate fully in the work of eradication as planned by the horticultural commissioner. In accordance with these plans I have made a careful inspection of the entire Simi Valley and other hay producing sections in Ventura county, and have obtained from residing farmers who have successfully combated the weed, and from other sources all possible information concerning the control of the pest which is presented in this publication.



RUSSIAN THISTLE—DETAILED FIGURES.

Detailed figures of the Russian Thistle: Fig. a, branch of mature plant, natural size; b, seedling about two weeks after germination, natural size; c, flower detached from the axil and remaining suspended by minute hairs, in the ordinary inverted position on a rolling plant, enlarged three diameters; d, flower viewed from above and in front, showing the calyx lobes connivant into a cone-shaped body, and the large membranaceous spreading wings, enlarged three diameters; e, seed with flower parts removed, enlarged five diameters; f, embryo removed from the seed, enlarged seven diameters.

Description.

The Russian Thistle belongs to what is commonly known as the goosefoot family of plants (Chenopodiaceae) and is closely related to our common pigweed, scientifically known as Amaranthus retroflexus, and to the Eastern tumbleweed. Though it is called Rnussian Thistle and Russian Cactus, because of its spines, it is not a thistle at all, but a tumbleweed, and in Europe is rightly known as the Russian Tumbleweed.

Young Plant.—The young plant appears with two needle-like leaves or cotyledons. Soon other similar leaves appear and the plant begins to stool. The foliage is light green and very tender at this period and is readily eaten by sheep.

The plants grow slowly until dry weather, and usually do not become bothersome until the hay is cut. But in dry seasons if the grain does not get a start the thistle will choke it out completely.

Adult Plant.—The adult plant averages from 1 to 4 feet in height and branches profusely from the single tap-root at the base. The spread often reaches 6 feet, but the more general size averages from 2 to 4 feet. Where three or more plants grow together they assume the general shape of a single plant—a flattened sphere.

The color varies from light-green to a blue-green. The stems and upper leaves are plainly marked with red longitudinal lines. The matured plant turns to a light brown color, and later bleaches to almost white. The branches become stiff and light, allowing the plant to be carried rapidly away with the wind, when detached from the soil. The detachment is usually accomplished by individual branches breaking off at the base, allowing the root to remain in the ground. The largest plants, when dry, will weigh about twenty pounds.

Root consists of a single white tap-root, with many smaller roots coming from it near the tip. When this root is severed the plant dies, thus making it easily killed by cultivation.

Stems branch profusely from a single erect shoot extending up from the root. The leaves are scattered in confusion over the entire plant. At each axil is borne a spiny bract surrounding the blossoms. The spines or bracts remain on the dry plants and give them the characteristics of the thistle, while the leaves fall early. These spines are so abundant and sharp that it is almost impossible to drive horses through a patch of matured thistle. In the Dakotas it has often been necessary to put leather boots on the horses while cutting the grain.

Continued on Page 263.

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OLIVE PICKLING.

By Mrs. M. E. Sherman.

The following formula for pickling olives has proven of so much value to those who have used it that we have asked Mrs. Sherman to revise and repeat it in the columns of the Cultivator. Mr. C. W. Beers, Horticultural Commissioner for Santa Barbara county, writes that he has had these directions printed and distributed through his office amongst the olive producers. He considers the quality of the pickle produced so satisfactory that he thinks the directions well worth passing along.

* * *

THERE seems to be no way of absolutely testing the olive to find out exactly the amount of bitterness that must be removed each season. It certainly is true that some seasons the olives are made into pickles with much less trouble. After having pickled them for many seasons, I have found the following method the best. I was first given an insight into this matter by a charming Spanish gentleman, a former Governor of California, years ago in Los Angeles. Then ashes from the oak trees were used to furnish the potash to remove the bitterness. As made by these people the olive was delicious. Their success was made by careful attention to little details.

When the olive pit will slip reasonably clear from the meat, it is time to begin to get the barrels or tubs or troughs ready. Everything must be cleaned, scalded, and then finally treated to a dose of lime water to be sure of the containers imparting no foreign taste. The olives are gathered in picking sacks or in tin pails, using care not to bruise them. If there are many to handle it will pay to use a grader for them; if only a few they may be readily graded by hand, separating the larger ones from the smaller ones. Then again if there are many that are not colored, it is better to keep these separate as they do not cut in the same time as more highly colored fruit. A little care in picking to take only the dark fruit saves this color grading.

The lye used for cutting the bitter white juices out of the olive must be of good quality and at least 90 per cent pure. The Greenbanks or the Hercules brand come in ten pound cans and have given us good success. These tins may hold more than is needed, but this strong lye is very useful around the house. It can be used to flush out drains and to mop up floors that are stained.

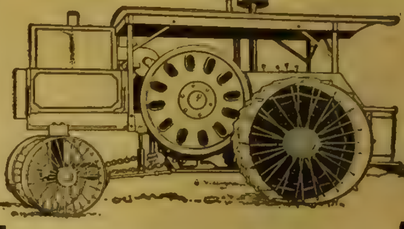
The ordinary five gallon coal oil cans are cut into buckets with handles and are convenient as measures. The lye solution is made weak, about one and one half to two per cent solution. The work is done by leaving the lye on twelve to forty-eight hours and once in a great while comes a season when it is necessary to use a second weak solution of lye. That has happened only once to me in many years, I think because the olives were almost at frost point and as the weather was very cold the lye did not act freely. Strong solutions that will penetrate in a few hours act on the tissue of the olive meats and cause them to soften and spoil.

Weigh one and a half to two pounds of lye and add it to one hundred pounds of water. Eight pounds of water is approximately one gallon. A coal oil can holds five gallons or forty pounds of water. Two and a half cans of water added to one and one half pounds of the lye makes a solution of one and one-half per cent. Then use your two hands as a scoop and add as much common salt as the hands will hold. Mix the salt and lye in the water and when well dissolved pour over the olives. Use enough solution to have it three to four inches deep over the top of the berries. If the olives float, use a piece of clean cheese cloth and then a wooden follower to hold them under. This is usually not necessary, however, as the olives are heavier, if of any size, than this solution. Cover the barrel from the light to save coloring as much as possible. The salt will keep the olives firm while in the lye and also, by its use they are partly salted before they are finished. The slimy bacteria are the only ones that interfere in making olive pickles and these can be controlled by a little salt.

Now comes the critical part of the work, training the eye to know when the cutting has proceeded far enough. I usually put the lye on at noontime and at night draw off a pail full or two and pour it again over the top of the olives to keep the lye from settling to the bottom too much. The next morning take a few olives from the barrels that represent an average of the sizes and ripeness. Cut them open with a knife to the pit and see the line of penetration of the lye. The lye carries a distinct yellow stain with it, while the juices of the olive are milky and the meat whiter when untouched by the lye. The lye must penetrate to within a line's breadth of the pit but not absolutely to it. When this line is reached turn off the lye at once. Perhaps once in ten or twelve years there may come a year when a second weak solution needs to be used. I have overcome this difficulty by warming up a tin of the lye solution and in that way secured better penetration. As long as the lye water is soapy or sleek feeling, there is strength in it. Sometimes the olives are as long as 26 to 48 hours in the solution. When the time comes that the olives are almost cut enough, try them every two hours and do not forget to draw off the solution and pour it back at each examination.

The olives are freshened in water to remove the lye. I throw a handful of salt into this water as it costs little and makes the matter safe. The salt water can be used to flush the drains out or on the asparagus bed to advantage. The exact length of time that it requires to make the pickle depends on the temperature. When the pickling is done in the packinghouse cellars it takes a shorter time than when it is done on the packinghouse porches. The cold air at night makes quite a difference in the temperature of the water. As soon as the lye is out of the olives we begin to salt them, using first three pounds of salt to the hundred pounds of water. Leave this on two days, then draw off and put on a six per cent, then an eight per cent. Some go farther and put on a solution as strong as twelve per cent. We do

Distillate Traction Engine



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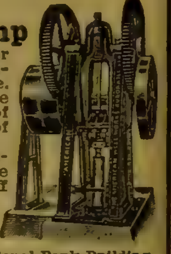

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not like that much salt on ours. The last strength solution of brine should be boiled and cooled, and the olives washed by running cold water over them and the casks intended to hold them should be made thoroughly clean. Examine the olives, and any bruised fruit put into a bucket by itself for immediate use. After that the brine should be watched and in six weeks taken off and boiled again to be sure they are keeping.

The simplest way to make olives keep is to can them. They stand cooking as well as any other fruit and are not at all hurt by it. In a small way use either tin cans or glass jars, wash and put in the berries by hand carefully, then fill the jars with boiled brine. The ten per cent solution is the one used commercially; we use eight. That is a matter of detail. Boil the brine the day before; skim it clean, and after filling the jars stand them up to their tops in a boiler of water and when the water around the olives in the jars has come to a good boil seal them up. We unearthed some over at the packing house that were over ten years old and found them perfectly good.

There are several other ways of fixing olives that make a pleasant change. The salted olives may be pitted and filled with thickened tomato catsup mixed with chopped red peppers. We had a Spanish cook that used to take a clove of garlic, add it to a gallon of olive oil, a little salt and one red pepper. He would then heat this up hot and pour over the olives in the glass jars, then seal them up. Everyone that ate of these olives after they were drained from the oil enjoyed them. The olive oil came into use for salads afterwards.

The olive is liked by the Italians when dried. I confess I never have cared for them, as the bitterness is atent and raises up at the last in mighty power to put a disagreeable taste into the mouth. An old French friend of our makes the olives into candies just by taking them from the brine and pouring over them a heavy syrup made by using a quart of glucose to five pounds of sugar, pouring t over the olives while warm and let-ing them stand in it in open pans or forty-eight hours, then repeating he boiling of the syrup. The minging of the salt and sugar gives a Chinese like confection. After the yrup is well into the olives they can be put into jars and when wanted or use are served by rolling them in oft sugar and putting them on white paper above the stove in the dish ack where they dry out enough to be eaten without daubing the fingers.

trust the time will come when we will make more and more use of olives. They are useful as an addition to duck gravy, and as a garnish nd touch of flavoring to many dishes eems unknown to the average cook. Try making a sandwich by melting cheese in milk and adding chopped olives to it flavoring with a little Worcestershire. Let this harden in a dish and then spread it lightly on one slice of thin rye or graham bread. The other slice of white bread butter lightly and lay on top.—M. E. Sherman.

The Fresno County Fair will open Tuesday, October 3rd and continue he entire week. The 4th will be Governor's Day and it is declared hat Governor Gillette, "Governor" ohnson and "Governor" Bell will e present.

CORRECTIONS.

In the California Cultivator, Vol. 35, page 198, issued September 1st, the statement was made that the Apricot Scale (Eulecanium armeniacum) and also the Frosted Scale (Eulecanium pruinosum) retained their legs and the power of locomotion throughout existence. This is not true for they do resemble Black Scale (Saissetia oleae) in this respect as well as those stated in the article. This however is true in case of the Citrus or Common Brown Scale (Coccus hesperidum) and many other soft forms including the Mealy Bugs, Orthezia insignis, Ceroputa yuccae, etc. —E. O. Essig, Santa Paula.

After the receipt of Mr Essig's correction the following similar and additional one came from Prof. Quayle:—

In Mr. Essig's article in last week's Cultivator the distribution of the Brown Apricot Scale (Eulecanium armeniacum, Craw) is given for the Santa Clara Valley only in this state and is limited in distribution in this country.

As a matter of fact, it has a much wider distribution and occurs in practically every state in the Union and on a wide range of host plants. In this state it occurs throughout the Sacramento and San Joaquin Valleys, from Red Bluff to Bakersfield. It occurs in the Vaca Valley, Napa Valley, Sonoma Valley and Santa Clara Valley. Of these, it is least a pest in the Santa Clara Valley. Here the Black Scale is associated with it and often occurs in greater numbers. The Brown Apricot Scale occurs in greatest abundance and does the most injury in certain sections of the Sacramento and San Joaquin Valleys.

As a matter of scientific interest only, it might be stated that the correct technical name for this insect is now Lecanium corni and the common name that has been proposed is the European Fruit Lecanium.

A little farther along in the same article Mr. Essig states that the Black Scale gradually loses its legs as it grows, whereas the Apricot and Prune Scale does not. In this respect the Black Scale is no different from the other two mentioned, or any other of the unarmoured scales for that matter. Neither do the Apricot or Prune Scales move at will throughout their entire existence. While they retain their legs, like the Black, they are incapable of moving after they are about half grown.—H.J.Quayle.

COLLECTING IN MEXICO.

Prof. A. J. Cook of Claremont informs us that Mr. David L. Crawford, formerly a student in Pomona College, is now in Mexico collecting insects, giving particular attention to those which are injurious to agricultural products. This is Mr. Crawford's second trip to Mexico. He formerly gave much attention to the ravages of the Morales orange maggot. On that trip he found that the pest was prevalent not only in the state of Morales but also in four other states of Mexico. This information is valuable to orange growers and should renew their efforts to prevent bringing to this country that worst pest of the citrus fruit. The expenses of Mr. Crawford's trip are being met by orange growers of Southern California and business men of the city of Los Angeles.

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The California State Fair

By M. C. Holman, Manager Northern Office of the California Cultivator.

The biggest peach and the biggest pear,
The biggest pig that was ever there,
The biggest horse that pulls a plow,
The biggest sheep and the biggest cow,
The largest pump to irrigate,
The biggest engine for traction freight,
The prettiest cock that ever crowed,
The sharpest reaper that ever mowed,
Everything best from each and air,
Everything best from earth and air,

WHEN Mr. J. A. Filcher, secretary of the California Agricultural Association began his quest for attractions at the State Fair he looked far and wide into the avenues of production and commerce. He sought to bring into the scope of a hundred acres the richest and best from glorious California. His field was broad and the range of opportunity was limited only by his ability to encompass the magnitude of the undertaking. The State Fair was magnificent in a thousandfold respect. No state produces so varied an assortment of fruits and vegetables. From the tropical gardens of Imperial Valley to the temperate slopes of the Sierras there is a range of production covering well nigh the field of Nature's bounty.

It is a pleasure to walk through the grounds and to look and wonder at the forces which have been at work to make possible such an exhibit. Perfection is everywhere in evidence. In our everyday labors we see and hear of these things scattered throughout the state. One section will be famous for its apples, another for its oranges, another for its raisins. The manufacturing centers claim specialties in particular lines. To see them all without the fair would mean thousands of miles of travel, months of time and tremendous expense. But here they are brought together "all for the price of one admission."

Assembled in one portion of the enclosure are massive buildings, four in number, where may be seen the produce of various counties arranged in most attractive style. Artistic beauty plays an important part in this exhibit, and the artist's handiwork is well illustrated in designs taxing the ingenuity and effort of dozens of trained minds. The capacity of each building is taxed to its utmost to accommodate the thousands of tons of fruits and vegetables. Tall pillars of oranges, great trellises of vines, massive arches formed by the commingling of various kinds of produce, give the appearance of a real fairyland where a magic wand has given the full measure of a rich harvest. The very air is permeated with sweet fragrance. Bands, sequestered beneath heavy foliage add their harmony to the scene, giving a truly wonderful realization of what man, in this favored state, can do.

The County Exhibits.

These in themselves formed a complete exposition. While not all of the counties were represented, enough showed their wealth of produce to inspire pride in every Californian. Alameda county was the only one occupying its own building. So varied are the agricultural and manufacturing products of this county that sufficient space in the main building could not be secured. From apples to gas machines there was a list of booths the simple enumeration of which would occupy a full column in the Cultivator.

Fresno county, always rich in the products of her soil, and ever willing to show herself to best advantage, occupied the center of the main building, and the artistic framework of her covering was beautifully entwined with the vines that have given that section a world-wide reputation.

Among the other counties worthy of special mention were, Glenn, Colusa, Monterey, Tehama, Kern, Placer, Tulare, Sacramento, Merced, Butte and Imperial.

Manufacturers' Building.

Adjoining the main building was the manufacturers' section where the mechanical eye found a feast. The constant hum of activity told of the forces of ingenuity which find daily employment throughout California. For the housewife there were sewing machines in constant operation, rug making from old carpets, self heating irons, together with cereals of various kinds in the process of manufacture into delectable edibles. Dozens of other helpful hints and suggestions delighted the vast throngs which constantly flooded the building. For the farm worker there were pumps and engines, cream separators, plows, harrows and other implements. For the business man on the farm there were card systems, typewriters, and bookkeeping forms for every need. Every section had its full quota of necessities and improvements. This building alone was worth a day's attention.

Poultry.

Housed in a separate building was the best poultry exhibit ever seen at the fair. Birds of all breeds, prize winners superbly groomed, held the admiration of thousands of spectators. From the little Golden Seabright Bantam to the huge Buff Cochin the list contained such birds as delight the eye of the fancy and commercial poultryman. More than 1,400 prize birds were shown. There was also a very complete showing of pigeons. Ducks, geese and turkeys had their special section.

Live Stock and Dairy.

The live stock and dairy industries were exceptionally well represented. There were Shorthorns, Jerseys, Holsteins, Dutch Belted and Guernsey cattle of the very choicest selection from the leading farms of the state

Horses.

Those who admire thoroughbred draft and coach horses were well rewarded for their visit to the fair. Under the supervision of Mr. F. J. Campbell of the Sacramento branch of the Lafayette Stock Farm a splendid showing of Belgians and Percherons was made. Class was everywhere the predominating feature and the beautiful animals disported themselves admirably before the great crowd of 15,000 spectators. The Salvador Stock Farm of Napa showed over twenty prize winners. There were also saddle horses of superior quality. Novelty traps gave excellent display to harness horses. The High School horse "Flash" commanded great admiration by his remarkable display of intelligence.

Special Features.

In the section devoted to pumps there was a complete assortment of makes and sizes. The best displays were made by the Krogh Manufacturing Company of San Francisco, and the Western Gas Engine Company of Los Angeles. Their largest pumps were constantly throwing great streams of water, while the smallest ones gave an interesting il- lustration of the complete range of their usefulness.

The Schmeiser Manufacturing Company of Davis kept its almond huller in constant operation. The Schmeiser derrick and the equalizing hitch drew many interested spectators.

One of the most important of the special features was the exhibit of the University Farm. Here were shown models of the horse and cow, portraying muscles, veins, arteries, viscera, etc. There were also disease germs, property bottled, afflictions of cattle fully illustrated; model dairy houses, methods of testing milk and of determining the presence of tuberculosis in cattle. This formed one of the most valuable exhibits from an educational standpoint to be seen on the grounds. Everything was fully illustrated and even the casual observer could not fail to retain helpful suggestions for the improvement of the farm.

Cowboys.

Easily leading as chief of the outdoor attractions were the bands of cowboys and Indians. Their show while not of the highest order, was calculated to thrill the heart of youth and age. Steer roping, broncho busting, wild horse racing, buffalo riding relay races, overland stage attacks, Indians burning a frontier village at night and the repulse by the soldiers were some of the features which occupied the afternoon an evenings. Added to this was the excellent fireworks display. Set pieces spinning wheels, bombs bursting in to varicolored lights and other interesting features made up this part o the show.

Night Illumination.

It was at night that the real splendor of the fair burst forth. Thousands of incandescent lights transformed the grounds and buildings into a maze of brilliance. From ever building hung festoons of colore globes. The avenues were hung an bordered with varicolored lights an large arc lamps dotted the enclosur at every point of vantage.

Altogether the fair was a worth attraction. Its educational feature stand out prominently as the cardin porpose of the great display. To se better and bigger things, to observ improvements and learn how to enjo and profit by them, to create a d sire to emulate success,—these a the greatest uses of the State Fair.

LIVE STOCK AWARDS.

Owing to the great length of t list of awards it is impossible f the Cultivator to print it in full, b amongst the winners we may no the following:

Dairy Stock.

The Jersey class was especial strong and producers from some the very best herds in the state we exhibitors. Guy H. Miller of Modes was there with cream producers, he has been for many years. He c ried home a liberal list of blue a red ribbons. Of course George Smith showed some of his own bree ing, also some of the matchless importations he has made within the last few months. Other winners were: H. N. Locke Co.; J. B. & J. E. Thorpe; L. J. Dobler, Peacock Stock Farm; and W. J. Hackett.

Another strong line was the Holsteins. The ribbon winners in this class were: University of Nevada; A. W. Morris & Sons; Vina Ranch; and Mills Estate.

A longer string of Guernseys was exhibited than has ever been displayed at the California State Fair before. It goes without saying that some magnificent specimens of the rich colored butter producers were in evidence. The exhibit of Charles G. Lathrop of Stanford University was an especially good one. Another exceptionally fine string was that exhibited by J. H. Mackenzie of Santa Cruz.

A good showing was made of the Dutch Belted, and all from the herds of Mrs. Jennie Strader and U. G. Strader of Ceres.

Beef.

Notwithstanding the Shorthorns are often classed with the general purpose cows, and many are indeed such, the exhibit at the Fair was practically all of the beef strain. In this class the competition was the strongest and gave the judges the hardest work. Among the exhibitors were Mrs. J. H. Glide of Sacramento and the Gibsons of Woodland, the Howard Cattle Co., G. A. Murphy and P. H. Murphy, J. E. Dickerson, and J. W. Goodwin.

In the Red Polls only one exhibitor showed his stock and some of it was exceptionally fine. This exhibitor was R. R. Cartwright of Modesto.

Horses.

The exhibit of horses, both of stock bred in this state and imported, was one of the surprises of the Fair. The Percherons made one of the most classy exhibits. J. Crouch & Sons of Sacramento made a great number of entries and of course as a result carried away a magnificent showing of blue ribbons. McLaughlin Bros. of Columbus, Ohio, made another strong showing. Henry Wheatley; Geo. A., and F. A. Read, Moorpark; C. R. Fillon; and Wm. Bond Newark were other exhibitors, while in the Farm Percheron class were Terry & White, M. Bassett, J. W. Johnson, and Edmond Miller.

Some beautiful specimens were likewise shown in the Belgian open class. Here again J. Crouch & Sons made a strong showing, and they won many ribbons.

Amongst the English Shire open class exhibitors were premium winners from the stables of Henry Wheatley, Geo. A. Smith, J. Crouch & Sons, and J. B. Agnew.

Geo. A. Smith of Corcoran proved a winner with his four-year-old stallion in the English Shire farmers' class. J. B. Agnew of Visalia had some exceptionally fine stock in the same class and won many ribbons.

In Hackneys Messrs. J. Crouch & Sons and Henry Wheatly exhibited and in the Gaited Saddle Horses, F. A. Bridgford, Mrs. John S. Bryan, Pacific Coast Association, Carlton Burke, and Geo. Wallace made strong exhibits.

Some aristocratic German Coach animals were shown by J. Crouch and J. B. Sherwin.

McLaughlin also made a fine showing of French Coachers.

In thoroughbreds the premium winners were Oswald and Dinchi, and Thos. Fox.

Standard Trotters class was a strong one and the exhibitors and winners were McAdrian, F. H. Burke, F. E. Emlay, and Chas. K. Marley.

Exceptionally fine harness animals were shown by F. H. Burke, R. E. L. Leavell, and Wm. Bond.

In the saddle horse class E. A. Bridgford, and Lee C. Deming, were winners.

H. E. Vogel of Fresno, and H. S. Madison won all the ribbons in the class of mules.

Swine.

Probably the favorite breed in swine were the Berkshires. Many herds furnished their best to compete for the ribbons. G. A. Murphy, also P. H. Murphy made exhibits and captured many premiums, as did University of Nevada, A. B. Humphrey, and Gilt Edge Stock Farm.

M. Bassett of Hanford entered into the Poland China class with determination to win and had stock which enabled him to do so. Other winners were P. H. Murphy, and Gilt Edge Stock Farm.

Amongst the winners of other distinct breeds of hogs were Four Oaks Stock Farm, Gilt Edge Stock Farm, G. C. Kreglow, P. H. Murphy and A. G. Humphrey.

Sheep.

The number and quality of sheep exhibited created surprise, one of the strongest classes being the Southdowns: The winners in this class were: Frank Brown, Hubbard Bros., University of Nevada, J. G. S. Hubbard.

The winner of all the ribbons in the Hampshire Down class was University of Nevada.

The Shropshire class was well filled and the premiums were won by Frank Brown of Carlton, Oregon; Bishop Bros., San Ramon; M. E. & G. K. Swingle, Davis. In addition to the open class Shropshires the grade winners were practically the same as in the open class.

Of course Bailey & Sons of San Jose, made their usual showing of Persians and won all premiums in that class.

The above named firm was also winner of all premiums offered in the Angora Goat class in which they made exceptionally strong showing.

All premiums in the Dorset class were won by University of Nevada as also were all in the Cheviot class.

POULTRY AT THE STATE FAIR.

Judging from reports received the State Fair Poultry Show was from every point of view a success—good in the number of entries made and the breeds and varieties staged, good in attendance and interest manifested; good in the prospective business it awakened for the exhibitors. For be it generally known, the poultry show at the State Fair has always proved a good clearance house for those who have exhibited liberally and had good stock to offer. Unlike the regular poultry show, it attracts the general farming community and shows to it the differences between mongrel and pure-blooded stock, while the regular poultry association fixtures are more alluring to the fanciers and experienced breeders catering to the market for breeding stock.

As usual at this season of the year, many of the birds showed evidence of the moult, having not fully attained their full winter plumage. With this exception quality was on the whole very good and most of the classes were well represented. The judging was promptly and satisfactorily done by S. Tyler of Pasadena, Robert J. Venn of Fresno, and Henry Berrar of San Jose.

Among those who were "in the winning" and well represented by strong strings of birds may be mentioned M. Bassett, B. P. Shirk, W. F. Heusel, and George L. Meadows of Hanford; Martha F. Wismer of Oregon; Mr. French of Stockton; Messrs. Fowler and Masterson of Duarte; F. E. Baldwin, San Jose; Lindgren Brothers, Kingsburg; John D. Mercer, Los Angeles; W. S. Sullivan, Agnews, besides many others.

The following is a list of Sweepstake and special prizes:

Martha F. Wismer, largest exhibit in American and Mediterranean classes.

W. S. Sullivan, first for best display of any single variety, not less than 25 specimens, Mrs. D. A. Robertson second.

Martha F. Wismer first best in American class; W. F. Heusel second. C. E. Ross first in Asiatic class, J. W. Blackman second. Lindgren Brothers first in Mediterranean class, F. E. Baldwin second. W. S. Sullivan first in English class, W. H. Ingram second. John D. Mercer first best in Oriental class, Wm. A. French second. Mrs. W. C. Bogan first in Bantam class, J. W. Blackman second.

SPECIALS.

American class.—Mrs. D. A. Robertson, best pen, best male. Clara I. Smith, best female.

Asiatic class.—L. N. Cobbledick & Co., best pen. J. H. Shirk, best male. John Russell, best female.

Mediterranean.—F. E. Baldwin, best pen, best male, best female.

English.—W. H. Ingram, best pen, best male, best female.

Polish.—Mrs. D. A. Robertson, best pair.

Dutch.—C. J. Siegfried, best pair.

French.—Mrs. Emma F. Reid, best pair.

Oriental.—John D. Mercer, best pen, best male, best female.

Game Bantams.—Emory Mitchell, best male, best female.

Oriental Bantams.—J. Will Blackman, best male, best female.

For want of space, The Cultivator finds it impossible to print a list of the individual awards, which will, however, be found in the more full and detailed report to be published in The Rural Californian for October, to which the interested readers' attention is directed.

Dried fruit producers of Tehama county have organized a co-operative marketing association and are discussing the standardizing of dried fruit.

Farmers institute is in session this week in Corning, Tehama county.

POULTRY SHOW DATES.

North Yakima, Washington, Sept. 26-Oct. 1, 1910. Washington State Fair. John W. Pace, Secretary, Harry H. Collier, Superintendent.

Stockton, Cal., Nov. 8-12, 1910. First Annual Exhibition of the San Joaquin County Poultry Association. Eugene P. Sabin, Secretary, Stockton.

Oakland, California, Nov. 22-27, 1910. Annual Exhibition of the Alameda County Poultry Association. E. K. Healey, Secretary, Alameda, Cal. tary.

Seattle, Wash., Dec. 5-10, 1910. F. E. Barth, Secretary.

Portland, Oregon, Dec. 5-10, 1910. J. C. Murray, Secretary; M. W. Coates and Harry H. Collier, Judges.

Petaluma, Cal., Dec. 8-11, 1910. Fourth Annual Poultry Show of the Petaluma Poultry Association. H. R. Campbell, Secretary, Petaluma.

Ashcroft, B. C., Dec. 23-31, 1910. W. Maxwell, Secretary; H. H. Collier, Judge.

Tacoma, Wash, January 3-11, 1911. Frank L. White, Secretary, South Tacoma; Miller Purvis, Judge.

San Diego, Jan. 4-5-6-7, 1911. San Diego Pigeon and Pet Stock Club. A P. A. rules. W. C. McDougal, Secre-

Los Angeles, Cal., Jan. 5-11, 1911. Annual of The Poultry Breeders Association of Southern California at Chutes Park. A. H. Memler, Secretary, San Gabriel.

Colfax, Wash., Jan. 10-14, 1911. H. Rosenkranz, Secretary. H. H. Collier, Judge.

Walla Walla, Wash., Jan. 17-21, 1911 H. Dickinson, Secretary; H. H. Collier, Judge.

Jerome, Idaho, January 24-28, 1911. Wm. N. Hardwick, Secretary.

The Kings county chamber of commerce will endeavor to stimulate interest in its fair and in the productions of the county by offering series of special prizes.

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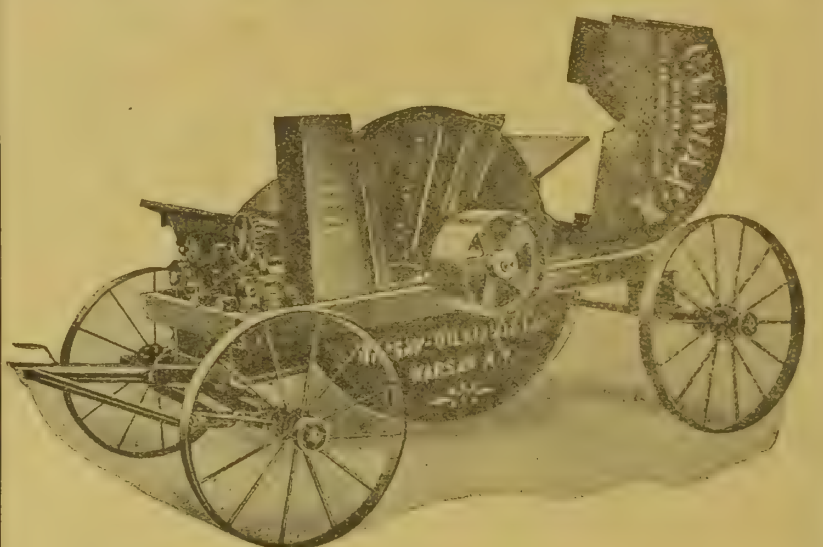

In the Climax Pneumatic Ensilage Cutter both the cutting and elevating are done by a large wheel which carries the knives on one side and the elevating fans on the other. Both the cutting and elevating, therefore, are done at one operation, in much simpler manner and with an expenditure of much less power than in those machines where the elevating device is a fan attachment added to the cutter.

The convenience of having an ensilage cutter of large capacity on its own road wheels is obvious. We confidently assert that no other ensilage cutter is so easy to work and easy to move and set up as ours, or has such large capacity for power used. They are unequaled in simplicity, strength, durability, convenience and safety in operation, and the excellent quality and uniformity of the silage. We received at the

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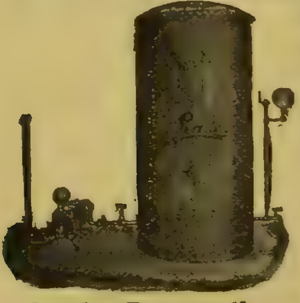

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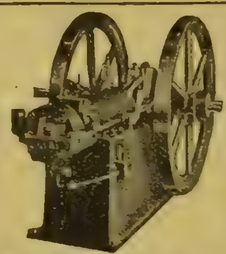

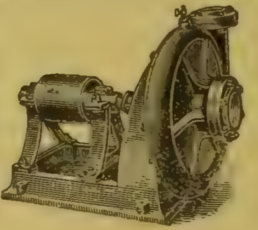

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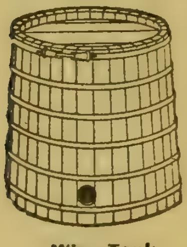

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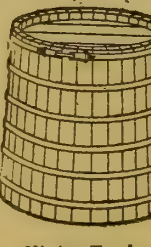

Water Tank

Live Stock and Dairy

Dairymen and stockmen are requested to write of their experience. Mrs. Sherman is always willing to answer queries and this, with experience of other workers, will make this department of greater value.

THE DAIRY CALF.

By Mrs. M. E. Sherman.

THE regular skim milk dairy calf is a pitiful object. It reminds one of the Fresh Air Fund child of a large city. The contrast between it and the healthy calf is about the same that is presented by the Fresh Airer and the normal country child. In the East one frequently meets bands of a dozen or more of these little city children with some motherly women on the way to the country for a couple of weeks. The hollow eyes and protruding stomachs all look like the ordinary dairy calf; it means that they lack proper nourishment. The calf needs warm, sweet milk in the summer time if it is to escape this misery. The glad old summer time with its heat and flies does not appeal to the poor calf struggling to live.

Grade Herd.

When the calves are only grades and all the milk goes to market, the kindly way that some men simply kill off the calves as soon as born is better than to raise them to make stunted cows. The calf that is not fed a good growing ration all the time will rarely overcome the early neglect it has suffered. The dairy that has plenty of skim milk finds it profitable to raise the calves to veal age, while in the pure bred herd all good calves are raised, for their value is great.

First Milk.

When the cow drops her calf, as soon as it is dried off, it will take milk. The first milk is important for any young animal, as Nature has put into it a purgative quality that clears up the tar-like secretion of the bowels and starts the stomach into action. It is almost impossible, to start a calf or colt in healthy life without this first milk. The first milk is usually not considered desirable for human beings to use, though there are parts of the country in the Old World where this milk is used to make rich custards for the table. The calf of a mature cow may as well be removed at first; and the little one take his first meal from the pail, and so save the mother's feelings. The heifer with her first calf does better if a little more indulged. They should be left alone until the calf has started a good milk flow and then about the third day the heifer should be regularly milked and the calf fed from the pail. The pressure of the milk in the udder makes the heifer anxious to be relieved and more patient in being milked.

Skim Milk.

After the first week the addition of skim milk a little at a time is begun. At first only a teacupful is added and then more and more until at the end of six weeks the calf receives only skim milk. Now while skim milk is a good food in itself, it is rather diluted and should be strengthened a little rather than to feed more of it. At first a small quantity of bran or middlings is thrown into the pail. Bran is usually the best, but sometimes proves too laxative, then middlings are used and give good results. The use of rolled oats is probably the best of all, but this is too expensive to consider in California. The reason for not continuing a complete diet of skim milk is that it makes the calves rather shapeless individuals. The mistake usually made in feeding skim milk is in giving too great a quantity at one time. Now if one could feed it three or four times a day the calves would need little else; an ordinary grown person can live and do a reasonable amount of work on three quarts of skim milk a day. The food value is there, but they will not feel very full or very lively. When the amount is increased greatly then comes the great distention with all its discomforts. The amount fed a calf must be largely governed by the individual animal; it is safe, however, to feed until the animal's sides are level full but not greatly distended.

Foaming Milk.

The idea that this distention was caused entirely by the foaming of the milk has been very prevalent. While the foam may add a little to the gasses that are distressing the anmal, it rarely produces much discomfort. Foam is largely wind, and the fact that the calf fills up on wind has much to do with its fading away from slow starvation. A day comes when the calf really gets a full feed and then it suffers still more, for "Fam ished people must be slowly nursed and fed by spoonfuls, else they al ways burst." The use of bran [illegible] middlings overcomes largely the pot bellied appearance and it also builds the animals up all over. Where there is a lack of thrift a mixture of grain may prove of benefit. Use two parts of bran or middlings, two parts o rolled barley and one part of oil meal It takes very little of this mixture from a quarter to one pound a day according to the size of the calf, t make a marked improvement in it condition.

Sweet Milk.

The calves should have the ski milk sweet and warm for the firs two months; after that it does n matter so much. If the calves ar

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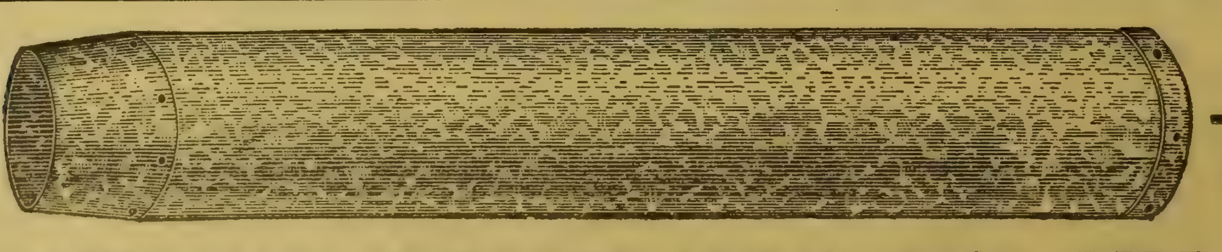

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to use turned milk it is better they should have it always a little sour than sour one day and sweet the next. The feeding pails must be kept as clean as possible; they need scalding and scouring as much as the milk cans. The use of bran in the pail largely prevents the calves from sucking each other's ears. They get the mouthful of meal the last thing and work on it until the saliva is dried up in their mouths. Where there are more than a couple of calves to feed it is better to use small stanchions and fasten each calf in place. The amount of milk put into the pail in front of each calf can then be right in quantity for its size. The calves should be left in the stanchions for half an hour after feeding them. They then forget to suck each other's ears. This early use of stanchions tends to break the calves into being handled and they never are as troublesome afterwards.—M. E. Sherman.

SORGHUM FOR LAMBS.

For the past few years alfalfa hay and pasture have been rather expensive rations for sheep or other animals being fitted for the market. They can hardly be fed with profit at the present relative prevailing prices of meat and alfalfa. In order to meet such a condition, various combinations of sorghum in substitution for the more expensive ration, were tested in comparison with alfalfa.

January 18, 1909, four lots of grade Tunis wether lambs, uniform in weight, age, conformation and feeding qualities, were selected, eight to the lot. Each lot was weighed on the three successive days just previous to the experiment; after that once every seven days during the trial and again on the three successive days at the close of the test. The lambs were fed the following rations: Lot 1, sorghum hay and seed; Lot 2, alfalfa hay; Lot 3, alfalfa hay and sorghum hay; Lot 4, sorghum hay.

Each lot received as much feed as was cleaned up without material waste. The waste was not weighed back and the total amount of feed was charged up to the lot receiving it. The following shows the total ration for each lot, total loss or gain, pounds of feed for one pound of gain, total cost of sorghum at cost of production and of alfalfa at $10.00 a ton, and the cost of one pound of gain:

Lot No. 1. Sorghum hay 717 pounds, sorphum seed 407 pounds. Gain was 11 pounds. The feed for one pound of gain was 102 pounds. Cost of the feed was $10.50 or 95.5 cents for each pound of gain.

Lot No. 2. Alfalfa hay, 961 pounds. The gain in this case was 82 pounds. Feed for each pound of gain was 11.7 pounds. Total cost of the feed was $4.81 or 5.86 cents per pound.

Lot No. 3. Combination of alfalfa hay and sorghum, 541 pounds of each. Gain in this case was 74 pounds and 14.6 pounds was required for each pound of gain. Total cost of the feed was $4.19 or 5.65 cents per pound.

Lot No. 4. Entirely of sorghum hay showed a serious loss, 1151 pounds was fed. The loss on the lambs was 49 pounds and the total cost of feed was $3.15.

The combined ration fed to Lot 3. produced the most economical gain, which was nearly equal to the gain of Lot 2. Sorghum hay and seed when fed alone was little more than a maintenance ration, as shown by the results from Lot 1. Sorghum hay alone showed a material loss when fed to Lot 4.

Summary.

1. Under conditions where alfalfa can not be grown to advantage, as on saline soils, when water for irrigation is scant, or following a crop of grain, sorghum may be grown as a forage plant to supplement the usual alfalfa ration.

2. Alfalfa alone produces the greater gain in weight per unit of feed. However, present prices of alfalfa and meat will not leave a very great margin for the profitable feeding of this ration.

3. Sorghum in combination with alfalfa makes the most economical ration, and the gains made are nearly equal to those with alfalfa.

4. Sorghum alone, both hay and grain, is inferior to alfalfa and at best makes little more than a maintenance ration.—F. W. Wilson, University of Arizona Exp. Sta.

COWPOX.

Cowpox is of very little consequence except that sometimes the sores are severe enough to interfere somwhat with milking. It is an infectious trouble and may be communicated from one cow to another by the hands of the milker. For this reason the hands should always be well bathed after milking the infected cow before beginning to milk another. It is also a good plan to bathe the udders of all the cows in an infected herd, whether they have all contracted the disease or not. Use the same wash as recommended below for the infected animals.

The only treatment necessary in cases of cowpox is to bathe the udder several times a day in warm water into which a little carbolic acid has been added. Another good wash is half an ounce of hyposulphite of soda in one pint of water.

If the teats are very sore it may be necessary to use a milking tube for a few days. In any case be as gentle with the operation of milking as possible, so as to cause the least irritation.—Southern Cultivator.

A great many think a hog roots merely for mischief. That is not the case. The animal roots for alkali, which it finds in the soil and which aids him in digestion. Nature helps him out in this way when man is foolis enough to neglect him. In the amount of carbonaceous feed that we feed the hogs, there is too little phosphate for them. Anything that we throw to the hogs, whether lime, bones or oyster shells seem to be greatly relished and seems to be a great help to them in digesting their other feeds, and promoting their general health. Tankage is an excellent feed to prevent the sows and pigs from having an apparent craving for uncommon feeds like bones, old leather and also killing chickens. It also aids them in getting more nutriment out of their other feed by keeping them in a healthy condition. A good plan is to satisfy the craving for "something different" by planting a patch of artichokes, which will give them their fill before putting them on clover or grass.—Rural World.

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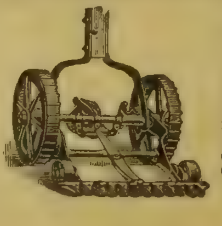

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Deciduous Fruit Culture

FIRE BLIGHT OR PEAR BLIGHT.

THIS disease which is known by a number of names such as "Fire Blight," "Pear Blight," "Twig Blight," "Blossom Blight," "Blight Canker," etc., is one of the most common and destructive diseases of pear trees. It also attacks apples, quinces and a few of the ornamental plants of the apple family. In some sections it also attacks plums and apricots. It is an American disease having been first reported from the highlands of the Hudson river about 1780. So far as is known it does not occur outside of North America. However, in this country it is distributed from the Atlantic to the Pacific and north into the fruit regions of Canada. It is the most dreaded of fruit tree diseases, particularly of the pear. It is distinctly epidemic in its nature appearing suddenly in a locality where it may not again be destructive for ten or fifteen years. Nevertheless it is always to be found every season to a limited extent in any locality, ready when the proper combination of conditions arise to spread rapidly and again work havoc.

The disease is caused by bacteria as has been repeatedly shown by careful investigations and experiments. There is absolutely no question any more as to the cause of pear blight. That these bacteria alone cause the disease is a fact, not a theory and as such is no longer debatable. These bacteria pass the winter in cankers on the body or main limbs of the trees. In the spring the bacteria spread from these cankers into the adjoining healthy bark where they are produced in such abundance that they ooze out in sticky, milky drops. Flies and wasps come to these oozing cankers and become smeared from head to toe with the sticky, milky ooze. This ooze is made up almost entirely of the blight bacteria. These insects then fly away to the opening blossoms which they visit for the nectar or honey leaving some of the bacteria from their feet or mouth parts in the nectar of the blossom. Here the bacteria multiply rapidly, penetrating the tender tissue and kill it causing "Blossom Blight." Bees visit these infected blossoms and spread the bacteria throughout the orchard which may sometimes show blossom blight on practically every spur. This blossom blight is common on both pears and apples and is usually the first evidence of the disease that the grower observes in the spring. The bacteria also ooze from these blighting blossoms from which they are carried by sucking insects such as plant lice to the tips of growing shoots, and "Twig Blight" results. Every grower has seen the growing tips of the pears and apples turn black and wither on the trees. Sometimes sucking insects or the curculio carry the bacteria to young fruits introducing them into the wound which the insect makes, thus giving rise to "Fruit Blight," which is not at all uncommon both in apples and pears. The bacteria work their way down the blighted blossom spur or blighted shoot and spread out into the bark, forming the cankers. These cankers are always marked by a well defined line or crack between the diseased and healthy bark. With the formation of these cankers the seasonal cycle of the disease is complete. The bacteria thus go into winter quarters in these hold-over cankers, becoming active again the next season, providing a source of infection for the spreading of the disease.

This disease is sometimes very abundant and destructive in nursery stock. The source of infection in these cases has been repeatedly located in holdover cankers on old neglected pear and apple trees or wild thorn trees near the nursery. The removal of these trees or of the cankers in them has almost always given immediate relief from the severity of the blight in the nursery stock. The disease is frequently introduced into the nursery stock by bees which visit the stray blossoms on quince or apple trees in the nursery row. From these centers of infection it is spread by plant lice and leaf hoppers to adjoining trees and from these to others thus spreading the epidemic. Mr. V. B. Stewart demonstrated during the summer of 1909 that this disease can be profitably controlled in nursery stock. By a systematic cutting out and disinfecting he was able to save a total of 2317 apple, pear and quince trees which became infected during the season but which were saved by prompt removal of the blighted tips of the shoots. From 130 acres devoted to apple, pear and quince stock he lost only 346 trees during the season, 256 of which were lost from a quince block which was badly infested and many of the trees were beyond saving when he began his work in the spring. By means of an automatic counter he kept a careful record of the number of trees pruned and the number of trees removed.

The secret of success in controlling fire blight is the frequent and systematic removal of all blighted blossom spurs and shoots before the disease can get into the trunk or large limbs of the trees. This means the inspection of the orchard or nursery from one to three times a week, carefully removing the blighted parts and disinfecting the wound wherever a cut is made, with corrosive sublimate, one part in a thousand parts of water. Disinfect the wound. Failure to inspect and remove the blight regularly and frequently means a certain loss of large limbs and often of trees, for the blight may extend into a tree quite rapidly killing long limbs in a few days if not removed. In ordinary seasons one man should be able to handle ten acres of Bartlett pears ten years old by going over the trees once or twice a week. In controlling the disease in nursery stock it will be found exceedingly helpful in preventing the spread of the disease to eradicate the aphis as far as possible. This was very successfully done in one nursery this season by dipping the lice infested shoots into whale oil soap dip, seven pounds to fifty gallons of water.—H. H. Whetzel, Plant Pathologist, N. Y., State College of Agr.

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FRUIT GROWN IN ARID REGIONS.

One embarrassment which fruit growers in the West have had to contend with is the lack of definite information as to methods under "our conditions." Books innumerable touching upon Eastern methods which have proved successful may be secured, but until the last few years nothing in regard to arid conditions has been available. Experiment stations and scientists from the Department of Agriculture at Washington have recognized the need and have been working successfully to meet it. It has, however, remained for two horticulturists connected with the experiment station of the state of Colorado to gather together in a 400 page book a fund of information which should be in the library of everyone growing fruit in arid or semiarid regions. The book was written largely with a view to intermountain conditions, and many of the specific examples are taken from Colorado fruit growing sections. Nevertheless the general principles apply in all sections with similar situation from the Rocky Mountains to the Pacific.

The authors are Wendell Paddock, Professor of Horticulture, and Orville B. Whipple, Field Horticulturist, both of the Colorado Agricultural College.

There are 20 pages touching upon the history and development of the fruit industry in Colorado. Location, exposure, soils, irrigation, planting, scientific discussion of orchard plants, study of buds of different varieties of fruits and full discussion of pruning, cover several chapters, especial attention being given to handling of trees under arid conditions and propagation of orchard trees. The chapter on the latter topic deals with an outline of the work, not giving as full detail as a nurseryman would require, but most valuable to the orchardist. Tillage with especial reference to fertilizers and green manure crops is carefully treated. Irrigation, of course, is given prominent place. Picking, packing and marketing, frost protection, pests and their control, are all touched upon.

From this outline it may be seen that the book is a complete manual for the orchardist. It is illustrated with nearly 100 line and half tone engravings. In givng an idea of the march of progress of the whole western country, the short historical sketch in the beginning of the book refers to a speech by Daniel Webster in the United States Senate showing Senator Webster's opinion of the West and doubtless that of many others of that early day. The extract of his speech follows:

"It was in 1838. A measure was before Congress to establish a post-route from Independence, Mo., to the mouth of the Columbia River. During the discussion, Daniel Webster, on the floor of the Senate, opposed it and closed his speech as follows: 'What do we want with this vast worthless area? This region of savages and wild beasts, of deserts, shifting sands and whirlwinds of dust, of cactus and prairie dogs? To what use could we ever hope to put these great deserts, or those endless mountain ranges, impregnable, and covered to their very base with eternal snow? What can we ever hope to do with the western coast, a coast of 3000 miles, rockbound, cheerless, uninviting, and not a harbor on it? What use have we for such a country? Mr. President, I will never vote one cent from the public treasury to place the Pacific Coast one inch nearer to Boston than it now is.'"

The book is published by Macmillan & Co., N. Y., or will be secured by the Cultivator Company if desired.

EVAPORATED APPLES.

The capital invested in the production of evaporated apples is large, and the industry affords opportunity for remunerative employment in rural districts devoid of other manufactories and in the suburbs of large towns in the orchard area. The existence of the evaporating plants adds greatly to the value of the fruit farms, offering a steady market and reducing the waste and loss from slightly imperfect fruit to a minimum. Formerly a severe gale of wind near packing time entailed heavy loss upon the fruit grower. Today the large, mature, but slightly bruised apples are immediately pared and dried for the market. The best and largest apples are thus saved and the orchardist is remunerated. The evaporators are competitors for orchard products with all the buyers of green fruit, purchasing whole orchards, evaporating the large apples and devoting the small ones to other purposes. Most of the apples are sliced in rings across the core, which has been removed in the paring process. In some cases choice fruit is quartered or dried whole for special orders. The best sorted fruit is used in both processes and the fruit is a product sought by the best houses in the country.

The inventive skill displayed in machinery for the handling of apples for evaporation is marvelous. Most of the "intelligent" machines for handling apples are the invention of men engaged in evaporators and who have had practical knowledge of the requirements. A machine that puts an apple on its stem end before slicing may be termed "intelligent" without serious violation of correct speech. The end of invention has not been reached. Handling by machines has insured the utmost accuracy and cleanliness. Evaporated apples are clean and sweet, with a rich fruit aroma that becomes fully evident upon proper cooking.—Green's Fruit Grower.

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The farmer must have bookkeeping of his own, and there are a number of these simpler methods of bookkeeping at which he need not shy. It may even be advisable for him to adopt any sort of bookkeeping which he finds and use as much or as little as he sees fit.

The point is that some bookkeeping is essential to the most profitable farming.—Spokesman Review.

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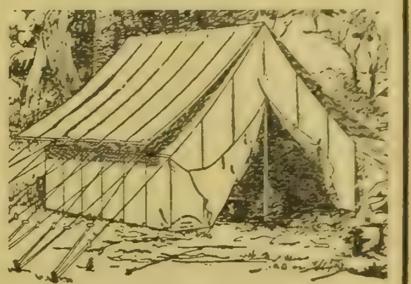

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We All Have Our Troubles.

California producers have doubtless felt that the situation confronting them is more difficult than most others have to face. The great distances to market, the more perfect organization of buyers, and, excepting in one or two lines, the less general organization of the growers, produce discouraging conditions.

Mr. Edward Berwick of Pacific Grove, traveling in England, sends The Cultivator a clipping from the London Daily Telegraph, a communication from "A Fruit Grower" who raises the same point which is troubling California producers. He says:

"It is indeed surprising that such choice and wholesome fruit as the strawberry should seemingly be treated with so much contempt, for the general price obtained in all towns alike was 4d, 5d, or 6d per 5-lb. basket of strawberries, including the basket.

"What remained after all expenses had been deducted was repayment for the grower's trouble, which he had taken for a whole year, and for the support of his household for another. Yet many growers here received, instead of a checque from their agent, a bill from the railway company for the charge on the carriage of the strawberries to agents or tradesmen in London and other towns, who were unable to sell at a price which would cover expenses. I have a return from one of my agents amounting to 2d. Out of that the picker has to be paid 1½d per basket, and the outlay on the basket, a penny, to say nothing of other expenses and the fruit-grower's living.

"In England fruit appears to be very indifferently appreciated, seeing that thousands of baskets of strawberries are sold to the public at 4d per basket, while thousands have to be destroyed for want of reasonable prices.

"The railway companies are much more lenient to their foreign neighbors than to their own countrymen, for little allowance is made in the charge on carriage of quantities, and conveniences are very limited for fruit sent from this district."

The above sounds very natural from the American standpoint.

Importing Agricultural Products.

The United States imports between five and six hundred millions of dollars worth of agricultural products annually. About half of these come into competition with productions of this country. Under this class are such items as sugar, tobacco, olive oil, raisins, prunes and other dried fruits, hay, skins, and some others. The other half is made up of silks, coffee, tea, certain fibers, bananas, etc. It is astonishing that fifty per cent of our imports are of an agricultural nature. As to the one item of olive oil, County Statistician Robertson of Fresno, reports that this country imported in 1908 approximately 65,000 barrels, possibly not a great amount considering the magnitude of our country, but when one thinks of the wealth and attractiveness which would be added by the planting of orchards in our valleys to produce that amount of oil, we get a faint intimation of the meaning to this state and to every other state in the Union if we could produce these goods now shipped from across the ocean. Some fruit growers have felt that it is unwise for California promotion bodies to induce people to come here until a better market is secured for our present output, but if our growers will produce a high grade article and market it on a businesslike basis, there is no reason why California should not furnish its quota of these products now imported, and we do not believe the prosperity of anyone now engaged in the fruit industry would be lessened thereby.

State Fair.

Measured by attendance California's State Fair this year reached the high water mark. Several spectacular features were run in connection which aroused much enthusiasm and secured the attendance of people from all sections of the state. San Francisco was particularly in evidence on Tuesday during the "San Francisco—1915" day.

Agriculturally the showing was fully up to any past exhibits in this state, but the greater attention given to spectacular features is somewhat disappointing to the taxpayers who wish to see the appropriation given for the state fair used to advance the legitimate agricultural interests of the state. But we assume the management has a pride in bringing the institution up to the point of being as nearly self supporting as possible, and suppose this is the excuse for the excess of flying machines, high divers, and similar attractions. It seems to take that class of entertainment to bring out the crowd which swells the gate receipts.

Extra Session.

The extra session of the state legislature convened, remained in session for a few days and adjourned, having accomplished the work for which it was called together. This was to submit to the people the proposition of bonding the state for five million dollars for the world's fair hoped to be secured for San Francisco in 1915; also another amendment permitting the city and county of San Francisco to bond itself for five million dollars for the same purpose.

Assuming that both these measures will be approved by the people, it will give the management of the world's fair a total of seventeen and a half million dollars, seven and a half million having been secured already by the citizens of San Francisco. New Orleans, which is a competitor with San Francisco for the honor of recognition by congress, has pledged herself to gather together ten millions. If there is any advantage in figures San Francisco should have a fighting chance.

The San Joaquin county highway commission is being severely criticised, the claim being made that the construction of roads authorized under the recent bond issue of $1,890,000 is being pushed too hastily and that this will result in faulty work. The objectors maintain that instead of 200 miles of roads as contemplated under the bond issue, they would rather see 100 miles better built. On the other hand the Los Angeles county commission is in hot water because it is charged that it is too slow and that its delays are causing great loss. We doubt not both counties will ultimately have greatly improved road systems, but it goes without saying that such improvements should be watched by the people who are most vitally concerned.

Overproduction.

Estimates are being made as to the coming citrus fruit crop of the state and many claim it will exceed 50,000 cars. The present year's output, including Central and Northern California, will be but slightly over 30,000 cars. The timid ones are beginning to inquire what will be done with this immense output. Admitting for the sake of argument that it will be as big as anticipated—which the more conservative growers deny—it is a safe proposition that if all will keep their heads and let the fruit be properly distributed through the twelve months, even 50,000 cars will go at a profit to every grower. It goes without saying that indifferent fruit should be made into fertilizer or other waste products rather than to pay freight on it across the country and depress the market for high grade fruit. If closer estimates made a few weeks later show the preliminary estimate to be reasonably correct, it must be admitted that great care must be used in handling off-quality fruit. Good fruit almost invariably commands full price, but the lowest grade in a sense fixes values, and in sufficient quantity prove a disaster. From present indications, the coming crop will be of highest quality.

More Co-operation.

We note that the citrus growers of Redlands have formed the Redlands Fruit Growers' Protective Association for the purpose of inducing packers to adopt a uniform system of reports and bookkeeping. The fifteen directors are representative orange growers. They expect to keep oversight of the oranges after they leave the orchards and are in the hands of the packers. In a sense this is to be a clearing house with an auditor to investigate books of the packers and to insure a square deal for the 300 growers who make up the organization. This is doubtless a move in the right direction, but it seems to us that it is a step still further in advance for the growers to hold full possession of their fruit until it is actually sold, as is done in the exchange.

The California Fruit Distributors are taking a wise step to increase the demand for one of California's products which it handles. It is printing hangers, the principal feature of which is two bunches of Tokay grapes in the natural colors. In the background are vineyard and home scenes typical of California's hillsides. Given on the face of the hanger is a list of the members. It is most attractively printed and we believe matter of this kind will greatly help to increase the demand for California fruits.

We have a letter from Prof. Anderson stating that preparations are being made for an exceptionally good program for Farmers Week to be held at Davis the week beginning October 10. The Cultivator will give in a short time an outline of it or possibly the full program. Farmers who can so shape their work as to attend these meetings should surely do so. The advantages of attendance are not confined to listening to valuable papers and addresses nor even to discussions upon them, for the farm affords visible examples of the work done.

Agricultural News Notes of the Pacific Coast

Northern California

The Eureka Fair is being held this week.

The Feather shows the lowest water for thirty years.

Alturas, Modoc county, is planning for a farmers institute.

Pear picking is all finished at Ukiah, Mendocino county.

The Farmers Union of Chico made an exhibit at the State Fair.

Up to September 1st Vacaville shipped 885 cars of fresh fruits.

Corn is being raised at Biggs, Butte county, without irrigation.

Ferndale, Humboldt county, closed a successful fair last Saturday night.

Thousands of pickers are now busy in the hop fields pulling the blossoms.

The Armsby Cannery at Yuba City, Sutter county, is running full handed.

Many cherry trees of Placer county are prematurely dropping their [illegible]s.

One hatchery at Petaluma has forty five-hundred-egg-size incubators in operation.

Some Eldorado county fruit growing sections report frosts on September 3rd.

The largest pear orchard in California is in Yolo county. It has 23,000 trees.

Oroville, Butte county, hopes to see a pre-cooling plant established there soon.

The Driving Club of Ukiah, Mendocino county, will hold a meet on September 17th.

Petaluma Grange is urging the establishing of an agricultural course in the high school.

Sacramento Valley Sugar Company is slicing beets day and night. The run will last about 40 days.

Some Sutter county producers have sold Thompson Seedless raisins as high as six cents per pound.

Horticultural Commissioner Newcomb of Sonoma county urges final spraying of apples for codling moth.

A poultry producer at Healdsburg, Sonoma county, is shipping some exceptionally fine stock to the Hawaiian Islands.

Oroville, Butte county, shipped five cars of dried peaches in one day. It brought the producers five cents a pound.

A new peach produced by Luther Burbank, said to be a cross between the Crawford and the Muir, is declared to be a wonder.

Notwithstanding canneries are in operation in Yuba City and Marysville that section has shipped much fruit to outside canneries.

Wine grape growers at Gridley, Butte county, have pooled their grapes which aggregate about 1400 tons. Picking began last week.

Fruit growers at Red Bluff, Tehama county, are taking steps to protect fruit labels adopted by them which certain shippers are appropriating.

Forest fires in Calaveras county destroyed the power lines so that the current was cut off, preventing the running of cars on many streets in San Francisco.

Central California

Twenty or more cars of apples are shipped daily from Watsonville.

The grain threshing season in San Benito county will extend well into October.

The Watsonville Pajaronian reports remarkable result secured from spraying.

A new packing house is soon to be constructed at Turlock by the Earl Fruit Company.

It is declared that many olive trees will be set in the San Joaquin Valley next spring.

Many grain growers near Hollister are selling barley, prices ranging from 95 cents to $1.00.

The Selma Cannery Co. has finished its year's run, the season having lasted about sixty days.

Stanislaus county vineyard owners are seriously considering the pulling out of wine grape vineyards.

A dairyman at San Jose was arrested last week because of disposing of milk reported below the standard.

Offerings of 3⅝ and 3¾ cents have been made to muscat raisin producers at Hanford, Kings county.

Hollister, San Benito county, reports shortage of threshing machines to harvest the big grain crops in time.

The directors of the Turlock Irrigation District arranged an excursion to the headwaters of the system last week.

Reports from market centers indicate a shortage of the world's dried fruit and that raisins are being held very firm.

Stockton shippers report shortage of hay storage at Coast points and refuse to attempt to deliver either hay or grain.

The large seed companies having lands in the Santa Clara Valley are using steam plows to prepare the ground for next season.

Salinas Valley grain warehouses are filled to overflowing with grain and a lowering in price is noted caused by some forced sales.

Estimates of the output of oranges from Tulare county show full crop and of excellent quality. Present indications are for early ripening.

The directors of the Turlock Irrigation District have opened a campaign on Russian thistle and Johnson grass along the canal right-of-way.

The forest fires in the mountains near Porterville have been brought under control and it is thought the loss will not aggregate more than $100,000.

The management of the Apple Annual at Watsonville to be held in October says that there are 27 carloads of fruit already entered. This will exceed the exhibit at Spokane last year.

The Raisin Day Campaign Committee has reports from some Eastern sections that advertising posters placed before the last Raisin Day are still calling attention to the good points of the San Joaquin Valley raisins.

Southern California

Bean cutting is practically finished.

Corona will grow beets for the new Anaheim factory.

Mountain streams are reported to be the lowest for many years.

Many negro cotton pickers are being brought into the Imperial Valley.

The California Date Co. at Heber, Imperial county, has fine dates ripening on its ranch.

Santa Ana, Orange county, has just purchased one of Ventura county's big bean threshers.

Apple growers of the Yucaipe Valley will make an exhibit at the Watsonville Apple Show.

It is estimated that the shortage of lima beans this year will be not far from 15 per cent.

The Forestry Service has a corps of men in the San Jacinto mountains gathering pine cones.

One ranch in the Antelope Valley disposed of 700 steers from its range during the past year.

The San Bernardino county horticultural commission has started a war on Johnson grass.

The new sugar factory at Anaheim estimates an annual output of 20,000 tons of granulated sugar.

It is reported that most of the cotton grown in the Imperial Valley will be shipped to mills in Japan.

The Los Angeles County Bee-Keepers Club held a meeting in the city of Los Angeles last Saturday.

The directors of the Rivera Fruit Association have planned to build an addition to their packing house.

Many high schools of Southern California will start their first term of agricultural instruction this fall.

The cannery at Hemet, Riverside Co. is closed and is now making daily shipments of carlots to Eastern points.

Fruit growers of the Mt. Vernon section, San Bernardino county, are planning a new packing house and cannery.

The bean growers association has held a meeting and it is understood the starting price on limas will be four cents per pound.

The fruit growers of San Fernando, Los Angeles county, are in arms over the dilatory tactics of the county horticultural commission.

Farmers at Coachella, Riverside county, have organized an advisory committee to study soil conditions and suggest methods of handling.

It has been reported that it is possible a shortage may be suffered by water users under the Laguna Dam in the Colorado river because of filling in of silt.

A new orange shippers association has been formed at Redlands under the name of Gold Nugget Orange Association. Its packing house will be located at Bryn Mawr.

The annual meeting of the Indian Hill Citrus Growers Association, recently held at Claremont, listened to reports showing that the shipments of oranges during the past year aggregated 471 cars.

The Coast

Arizona has an alfalfa acreage of 65,000.

The Oregon State Fair is being held at Salem this week.

One orchard of 1000 acres has been planted at Albany, Oregon.

Grants Pass, Oregon is shipping a carload of watermelons daily.

The Interstate Fair is to be held at Spokane, Washington, October 3-9.

Portland is planning for a big apple show November 30 to December 2.

Late potatoes near Portland, Oregon, have been seriously damaged by the drouth.

Severe windstorms have blown off many unripe prunes in Clarke county, Washington.

The Washington State Fair is to be held at North Yakima, September 25th to October 1st.

There are planted in the Salt River Valley, Arizona, over 1250 acres of citrus fruits.

Hundreds of acres of potatoes were ruined in western Oregon by killing frosts on August 25th.

Stubble catching fire from the engine destroyed an alfalfa hulling outfit at Yuma last week.

Extensive rains are covering the Northwest and bringing the great fires under complete control.

With the short labor supply and big crop peach growers at Parker, Washington, lost much fruit.

The market at Seattle, Oregon, is glutted with the greatest quantity of peaches ever seen on that market.

The first shipment of a carload of honey into Spokane was on August 30th this year. It sold at $3.50 per case.

Many irrigation systems were put out of commission by the recent forest fires sweeping over the Northwest.

Alfalfa dropped two dollars per ton last week at Boise, Idaho, and is now selling there at $10 per ton baled.

There are 20,000 acres of rich land taken by Johnson grass near the head of the Verde and Salt rivers in Arizona.

Agents of the War Department are in Portland seeking bids on 10,000 tons of oats and 10,000 tons of hay for shipment to Manila.

An election is to be called at Le Grande, Oregon, to determine as to the making of an irrigation district of 40,000 acres of land lying near the city.

The Department of Agriculture will urge the experiment station service to make extensive exhibits at the dry farming congress at Spokane October 3-6.

The Northern Pacific Railway is again receiving fruit for shipment. During the great fires it refused consignments because of impossibility of getting trains through.

The government has shipped a large number of pure bred Shorthorns and Herefords secured in Nebraska to the Indians on the Klamath Indian reservation in Oregon.

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If you were going to erect a large building, you would consult an architect—if you wanted some legal papers drawn up, you would go to a lawyer—because these men have made a special study of their respective professions.

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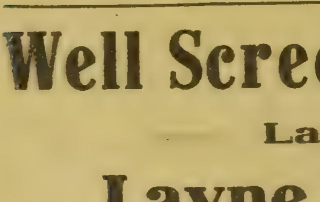

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Profit in the Poultry Yard

THE GUINEA HEN.

By Professor M. E. Jaffa.

FOR some years it seemed as if the guinea fowl were destined to disappear from American soil. One could travel for miles over lands devoted to the raising of all kinds of poultry without coming across a single bird of this variety. Little by little, however, the tide seems to be turning and little by little people are beginning to realize that there is a definite place and a definite mission for the once despised guinea hen.

The prejudice against her was not unfounded. She is certainly, by nature, an undomestic, wandering bird with a loud, harsh cry that does not serve to win admiration. But even this disagreeable trait has been turned to good account, by those wise enough to make use of it. She is really a valuable bird to have in countries where hawks or marauders of any kind are apt to visit the poultry yard. Her cry serves to frighten away the menacing party or to arouse the sleeping family. And after all, it is really not more disagreeable than that of ducks or geese.

Another virtue of the guinea hen, if such it may be called, other than serving as a "watch dog" for the poultry yard, is that she will eat large numbers of insects, when allowed to range, and will thus help to free the farm from many pests. She also feeds on weed seeds and helps the farmer in his efforts to eradicate this other enemy to his crops. In many cases it has been found well worth while to keep a few guinea fowl on the farm, for these purposes only. But they may also be reared for profit as other poultry are, in connection with these other unique advantages.

A demand for guinea fowls, in some markets, has been gradually growing from year to year. This has been caused, probably, by the increased strictness of the game laws, which prevent people who are fond of that kind of food from enjoying it at all times, as they would like. A good substitute for game has been found in the guinea fowl, which tastes much like pheasant, partridge or quail. This has long been recognized in Europe, where they have for many years been prized as table birds. Indeed, in some places on the Continent both the bird itself and the eggs bring better prices than can be had from chickens. The eggs are smaller than hen's eggs, but are said to have a finer flavor. It would probably be quite possible, with a little effort on the part of those who wish to keep these fowls, for the purposes mentioned, to create an appreciation and demand for them in their own local markets.

The best plan to follow in installing the guinea fowl on the farm is to set the eggs under an ordinary hen. If possible, another hen should be set, on her own eggs, about a week later, in order to bring out two broods at the same time, the period of incubation being that much longer for the guinea eggs. The broods should then be divided between the two mothers and the little guinea babies will learn obedience and gentle ways by imitating the little chicks. In this way their wild habits can be modified and they can be taught to roost at home, before they are given their liberty.

The newly hatched guinea chicks are very small and unusually active and a fine netting is necessary to enclose and cover the yard, as they can both fly high and squeeze through an inch opening. They must be closely watched at first, else they will get lost. Turkeys may be used for hatching these birds and can cover eighteen eggs.

Guinea chicks seem to need food every few hours. A diet of stale bread, chopped egg, millet seed and sour milk or cottage cheese is recommended by those who have had the most experience. They should be fed almost immediately after hatching, not being able to stand the fast that other chicks can. Later, chopped lean meat and onion and greens may be given. After the first week or two they may roam with the mother hen. No matter how much good feed there may be on the range they should always be fed regularly in the poultry yard at night, so as to teach them to come home to roost. They should not be hatched later than July in regions where the winter climate is severe, as they do not resist the cold very well.

In the wild state guinea fowls tend to mate and therefore it is necessary to keep a large number of male birds in proportion to the hens. Three or four hens may be kept with one cock if the eggs are to be used for hatching, but if they are being used for the table only, the number of hens may be increased. Under proper conditions the fertility percentage of the eggs is very high, and this, together with the fact that the birds are not very susceptible to disease, renders their rearing satisfactory from the point of view of probable loss.

The best age for marketing guinea fowls is from five to eight months, although there is also considerable demand for broilers weighing from one-half pound to a pound. C. F. Langworthy states that one fashionable hotel in New York used 3,000 of these birds between January and April, 1905. He also states that they are usually sold undrawn, and often unplucked, as is the case with game, their handsome plumage probably adding to their attractiveness. Connoisseurs consider that the finest flavored meat is obtained from crosses between the white and the pearl strains.

The sex of the guinea fowl is determined by its cry. The hen utters a two-syllable cry, described by different people as resembling the word "buckwheat, buckwheat," or good luck, good luck," or even "pot rack, pot rack." She calls out frequently The male bird, on the other hand, utters his cry very seldom, and it is a harsh one-syllabled sound like "click!" One is sure to hear it if by accident he passes the nest where the hen is being protected during her laying or setting. He is a very devoted and gallant bird and always bears his share in the work of protecting and rearing the young brood

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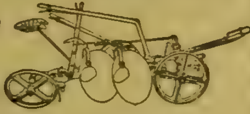

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fer to roost in trees, and although many breeders keep them penned until they begin to lay, they do not require houses for protection, except in the most severe climates, and are apt to do better when given their freedom.—San Jose Mercury.

THE MARKETING OF EGGS.

From a discussion of this subject by A. G. Phillips in a bulletin of the Kansas Station the following facts are drawn:

The demand for eggs seems practically unlimited, more especially for the better grades. The growth of the storage industry has tended to equalize prices by increasing the demand in summer when fresh eggs are plentiful and supplying the deficiency in winter when fresh eggs are scarce. Since the demand is greatest for the best grades, it seems obvious that a little more attention to details will result in a profit amply repaying the extra time and labor involved.

It is not the purpose here to enter into any discussion of the ways of increasing the production of eggs, but simply to point out the possibilities of profit as a result of extra care in handling and marketing the eggs now produced; the extra profit is to be made by obtaining the top retail price, and, as consumers become acquainted with the product, by obtaining a premium of from 1 to 5 cents per dozen over the regular price paid for ordinary eggs.

In order to obtain top prices for eggs, they must be uniform in size, uniform in color, and uniform in quality. The uniformity in color is not always important and depends on the market; uniformity in size excludes small eggs and unusually large ones as well; while uniformity in quality calls for absolutely clean eggs that have been gathered promptly after being laid, kept under the best possible conditions, and marketed not more than three or four days after they are laid. It should also be noted that only eggs with firm strong shells should be marketed. One thin shelled egg may not only prove a total loss but may also soil half a dozen others.

In order that eggs may be clean, it is necessary to provide clean nests for the hens to lay in. The eggs should be gathered at least once a day and oftener in warm weather. The eggs should be kept in a clean, dry, cool place. Any small or dirty eggs should be used at home; a dirty egg used at once is as good as any, but it will not keep as well and will spoil the sale of clean eggs. Never put in an egg that is not known to be absolutely fresh.

The time of marketing will depend on local conditions, but should be as often as once a week at any time of the year and at least twice or three times a week in summer. In cases where it is impossible for a farmer to take his eggs himself as often as that, he can arrange with a neighbor to take the eggs on alternate marketing days.

The methods of selling the eggs will depend on the distance from the market, the number of eggs to be disposed of, and other conditions that will vary in different places. Where it can be done in connection with the sale of other produce, such as dairy products, the most profit can usually be made by selling direct to the consumer. In such case it will probably pay to put the eggs either in plain cartons or in cartons which have the name of the farm printed on them. The plain cartons can be bought for 60 cents a hundred, or perhaps for less in large quantities; when printed, of course, the cost would be greater, but it would probably not exceed 1 cent each.

If it is not feasible to sell the eggs direct to private customers, it may be possible to sell them to a grocer who has a high-class trade and will be glad to get absolutely reliable eggs for his customers. In such a case it would be worth while to put the eggs up in cartons, with the name of the farm on them, in order to educate the customers to call for eggs from that farm. When a farmer has a good many eggs and does not wish to bother with cartons, he can often do well by selling his eggs to a hotel or restaurant.

If none of the ways suggested are feasible, then the eggs can be sold to dealers, but an extra price can be obtained from them also as soon as they are convinced that the eggs furnished them are absolutely reliable.

If there are children on the farm, they can be taught to care for the eggs, and will take pride in doing it well, especially if they are given a share in the profits.

It should be remembered that it will take time to work up a demand for selected eggs, but when people are once convinced that the eggs, can be depended on, they will not only call for such eggs, but will tell their friends about them.—Farmers Bulletin 405.

POULTRY QUERIES.

Sucking Eggs.

One of your readers wanted to know how to break a pup from sucking eggs. I have been successful in that line by giving pups all the rotten eggs they would eat. Just lay them around where they will be sure to find them and they will know when they have enough and will soon get so they can't look an egg in the face.

Others are troubled with ticks. I have solved the question of ticks and mites by using about three parts attention to one of kerosene with a wide paint brush to spread it onto the roosts. Distillate will do as well and is cheaper. And do you know I think the mites scatter the roup among the chickens as the Texas fever tick spreads the Texas fever among cattle, for I have noticed that when I have had more mites I have had more roup and that as I suppressed the mites I had less roup.

We keep about two hundred hens and raise a few hundred young chickens every year. In getting acquainted with the business we have blundered through the ticks and the mites and the roup and the limberneck, and have found that one of the best things to give the chickens is attention. One can get plenty of kerosene at any grocery store, but attention is very scarce sometimes, and when it is the mites and roup are very plentiful.—S. T. Fleenes, Ceres.

Too much leniency shown toward sick fowls, and a failure to remove them from the rest of the flock in hope of their ultimate recovery, often lead to the inoculation of the entire flock and the ruin of the enterprise.

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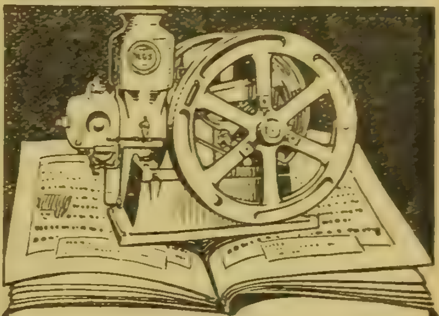

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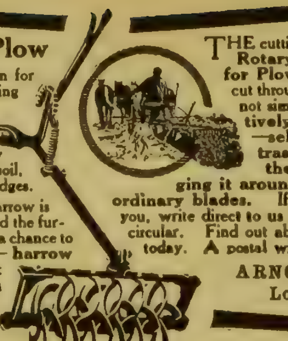

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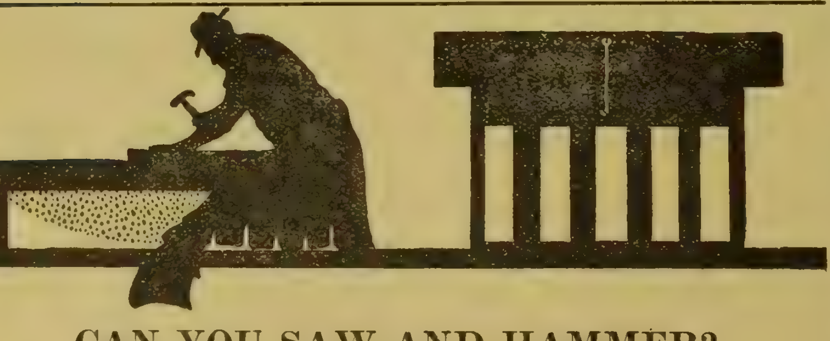

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Bees

SUCCESSFUL BEEKEEPING.

TO BE a successful beekeeper one should be enterprising and industrious and learn to do the right thing at the right time.

Many people fail in this pursuit not so much from a lack of knowledge as from not giving the necessary attention at the proper time. Thousands of bees are lost every winter because the owner guessed they had enough stores. Thousands of swarms abscond from inattention on the part of the owner during the swarming season. Tons and tons of honey are lost from enforced idleness because the colonies were not provided with room at the proper time.

I once had a man visit me at my home to learn why, after years of beekeeping he had not been successful. After a long conversation with him I said: "There is never an effect without a cause, and it seems you have never expected a crop of honey. If I were to suggest a motto for your shop it would read something like this: 'Blessed are they who expect nothing, for they shall receive it.'" You must have faith that you will get a crop, provide everything necessary to secure it and persistently work to that end. Today this man is one of the large producers of honey and has three fine bee yards and says the most profitable day he ever spent was the one when he found out why he had failed.

Many keep bees for the pleasure they derive from a study of their habits, and, after having overcome the fear of stings, discard both veil and gloves and, by using a little smoke, handle them freely, caring little for a few stings as the system becomes adapted to the poison.

I usually handle them without veil or gloves even on yards where the owners consider it unsafe to dispense with such protection. Some of these men believe that I have a preparation that I apply that makes me immune to stings. Such is not the case. It is only by understanding their likes and dislikes better than their owners. Always use smoke in handling them; not too much, but just enough to keep them quiet. Do not handle them immediately after a long rain or on a cool day if it can be avoided. Do not jar the hives or blow the breath directly on them. Handle them carefully and avoid crushing even a single bee, as the odor of the poison angers them. Avoid being nervous and be kind and courteous. By observing these simple rules a yard may be kept quiet and orderly often for the entire season.

In conclusion I would say that I advise no one to embark in this occupation who believes in luck or that they can succeed without hard labor and diligent study, but I know of no branch of agriculture for the capital and labor invested that pays as good returns, not only in dollars alone, but in health and vigor and the knowledge that your occupation is a blessing to your community and that it brings you in close touch with that infinite mind who has placed in your hands his tiny workmen that will reward you according to your faithfulness.—Charles Stewart, New York Bee Inspector.

ABC AND XYZ OF BEE CULTURE.

Probably one of the greatest factors in successful apiculture for many years has been the "ABC and XYZ of Bee Culture," edited by A. I. and E. R. Root and published by the A. I. Root Co. of Medina, Ohio. It is a cyclopedia of everything pertaining to honey bees; hives, honey, implements, honey plants, and is made up of facts gleaned from the experience of thousands of bee-keepers and, as the editors say on title page, "verified in our apiaries."

As complete as this book has been for many years, a new and revised edition has just been brought from the press, making the astounding number of 130,000 copies, said to be more than the combined publications of present and former works on bee culture in the English language. This book not only has fullest explanations in its text of the various processes in bee culture, but is made of greater value by profuse illustrations. The greater part are half tones, and as we open at random we see six half tones on two pages. Scenes are depicted of bee culture in America and all parts of the world, and the honey plants are so clearly pictured that they would be readily recognized.

The book will be supplied by the business office of the Cultivator if our patrons desire.

A GOOD NEWSPAPER.

The medium which keeps the Cultivator in closest touch with agricultural conditions of the great Sacramento Valley and which seems to be particularly proud of the growth and increasing prosperity of that section, is one published in the city of Sacramento. It is the Sacramento Bee, and is worthy of the liberal support which the people of the great valley are giving to it.

Veterinary

Answers in this column by Dr. R. T. Whittlesey, are without charge. For immediate mail answer remit $1.00. In writing questions give full symptoms or particulars of injury of animal.

Possibly Blood Poisoning.

Would like to know cause of death of mule. I noticed recently that as the boy drove him in from pasture he lagged behind the rest of the stock; he soon became stone blind. The least exertion put him out of breath, and the act of drinking or taking a bite of hay would cause him to breathe very heavily. Later he would stagger and fall. His eyes were greenish and glassy. In 24 hours he died. He was just getting over a bad wire cut.—Subscriber, Woodlake.

The symptoms described would fit several diseased conditions. The trembling and falling came from heart failure. The most probable cause was blood poisoning from improperly treating the wire cut.—R. T. W.

DR. WHITTLESEY'S VETERINARY REMEDIES.

These are not ordinary mixtures but are from well tried formulas, used in an extensive practice in Southern California for nearly a quarter of a century. Dr. Whittlesey's Sulphur Arsenical Salve for deep fistulous or ordinary chronic, indolent sores such as. "Poll Evil," "Fistulas," "Quitters," "Thrush," "Scratches," "Warts," "Collar Sores" or "Sit-fasts," $1.00 per package postpaid. Printed directions. Dr. Whittlesey's Antiseptic Healing Powder forms a coating over raw surfaces, excludes air, flies and floating germs. Makes a cheap and convenient dressing for the many sores that occur to stock on the ranch. $1 full pound can postpaid.

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Irrigation and Forestry

IRRIGATION IN WESTERN OREGON.

DISCUSSING the purposes of the National Irrigation Congress in an address following a luncheon in his honor at the Hamilton Club at Chicago on June 8, R. Insinger, manager of the Northwestern & Pacific Hypotheekbank of Spokane, and chairman of the board of governors, said that in addition to saving the forests, storing the floods, reclaiming the deserts and swamps and making homes on the land, the organization also aims to bring a better and more intelligent class of settlers to the country, with a view to the utilization of every opportunity offered by intensive farming to increase production and decrease the cost of living. He added among other things:

"The National Reclamation Act, adopted by the United States Congress in 1902, is the outgrowth of years of work by this organization to obtain the enactment of such a law. This has given the country 25 projects, representing the reclamation of 3,198,000 acres of land at a cost of $60,000,000, while 13 projects held in abeyance until the completion of the foregoing, will add 3,270,000 acres more to the crop-producing area of the United States. This total of 6,468,000 acres will furnish homes for 3,500,000 persons and add several hundred millions of dollars to the taxable property of the various states.

"The congress, which gained such wide-spread recognition at the Spokane convention, last summer, will have its 18th session at Pueblo, Colo., September 26 to 30, under the presidency of B. A. Fowler of Phoenix, Ariz., who has been actively identified with the organization for years. It is promised there will be several thousand delegates, including practical agriculturists and irrigationists, from all parts of the United States, Canada and Mexico, also from 30 to 40 foreign representatives and diplomatists, heads of national and state departments, capitalists and engineers.

"There will also be an exposition of apparatus for raising and putting water on the land and representative exhibits of products of irrigated tracts, thus bringing together in the heart of the Arkansas valley the most comprehensive demonstration of the value of irrigation in the history of the movement. Colorado has a larger acreage under ditches than any of the western states and, as practically every approved method of distributing water is in use in that state, there will be opportunities to study the various plans of supplying moisture by artificial means to the land.

"In the states from the Missouri river to the Pacific ocean there are fully 3,000,000 acres under irrigation or to be watered in the near frture. Allowing an average of 20 acres to a family and five persons to a family, this acreage will support 750,000 persons. To this number might be added 750,000 more, representing the number of persons needed to supply the wants of these tillers of the soil and to transport their products. Irrigationists claim that an average of 10 acres to the family is high enough; but, to be conservative, an average of 20 is used. On that basis these 3,000,000 arres would furnish a living, directly or indirectly, to at least 1,500,000 people.

"Planted to wheat, producing an average of 30 bushels an acre, this irrigated area would yield 90,000,000 bushels; or 24,000,000 tons of hay, if planted to alfalfa, while if in apples, as grown in the Northwestern states, the yield would be 30,000,000 tons. This enormous tonnage would call for more railroads from the great lakes to the Pacific Coast, millions of dollars worth of new equipment and the employment of hundreds of thousands of skilled machanics and laborers in mills and factories all over the country. It would also mean more business for the banker and merchant.

"One hundred and fifty million dollars has been invested in irrigation canals in 16 arid states and territories and a harvest valued at $250,000,000 is the former deserts' response annually to the intelligent application of water to the sun-scorched valleys. The possibilities of reclamation and its bearing on the future welfare of the nation can be better realized when we consider that fully 35,000,000 acres of arid or semi-arid land can be reclaimed by irrigation, in addition to the acreage now irrigated, and approximately 75,000,000 acres of swamp land by drainage. Between 10,000,000 and 11,000,000 persons are now engaged in agriculture in the United States, and practically all of the arable land in the humid regions is embraced in the 6,000,000 farms under cultivation. The average size of these farms is 146 acres.

"France is a country of only 207,054 square miles and has a population of nearly 40,000,000, yet it is the banker nation of the world and supports its people comfortably. The German empire has 208,000 square miles and a population of 60,000,000. Austria-Hungary has 261,000 square miles and a population of 47,000,000.

"Under irrigation the tendency is to greatly restrict the size of the farm unit. Experience teaches that in most irrigated districts it is impracticable for a farmer to cultivate a large holding. As a consequence the average farm under ditch is much smaller than in the humid regions. Thus provision is made for a larger farming population, with a corresponding increase in the production of farm products, thereby adding immensely to the country's wealth. Irrigation is the most practicable insurance against crop failure, and it relieves the farming industry from the element of chance.

"Irrigation invariably means intensive cultivation and this in turn means larger crops. Through the use of smaller tracts the country districts have become so thickly populated they resemble suburbs of large cities; but there is no congestion nor is there the menace of an underfed and poorly housed population. It means the farm village, lighted by electricity, furnished with domestic water through pipes, and telephones and automobiles and other conveniences. It means a union of the social features of town and the healthful ones of country life and, as some one has well said, 'the disappearance of lonesomeness without the worse evil ot overcrowding.' "—August Wolf.

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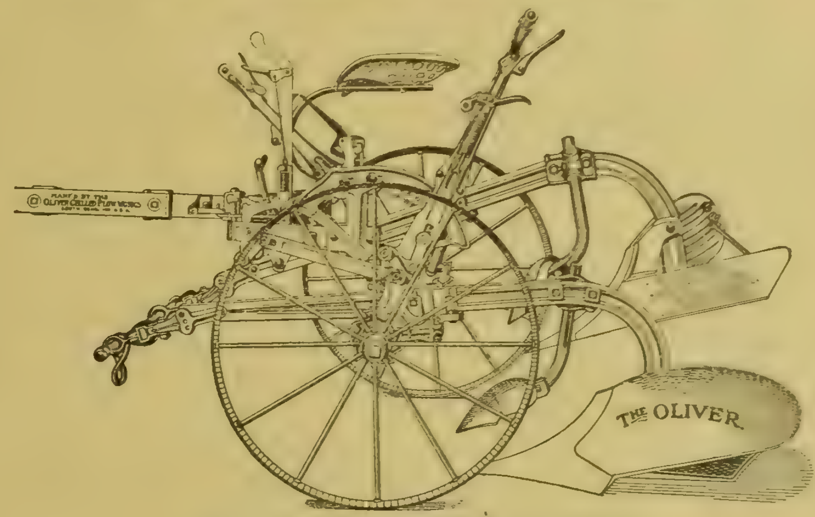

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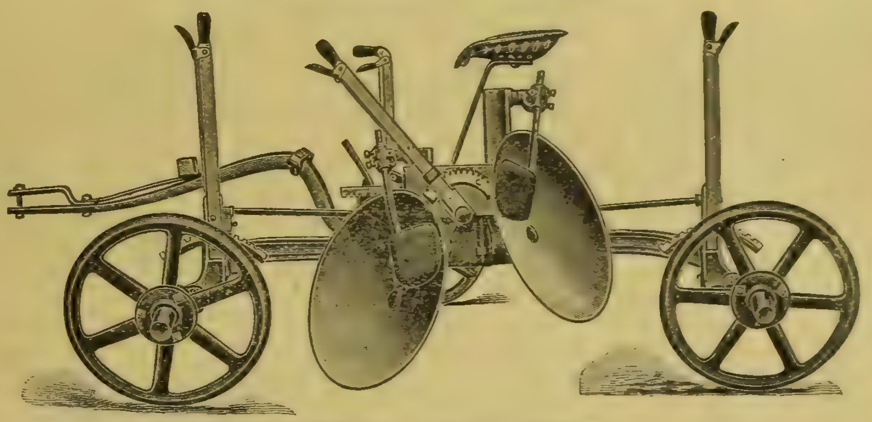

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Queries and Replies

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Curing Lemons.

Please give process of curing lemons.—F. A. Wharton, Fresno.

We have seen lemons picked from the trees, covered with wet sand and left for months. They came out yellowed, velvety and perfect fruit. One orchardist in Los Angeles county thought at one time that he had made a great discovery and treated many loads of them by this process. Such handling is altogether too expensive, however. The usual method is to pile in tiers eight boxes high close together but with small alleyway between rows for circulation of air. The circulation of air is then controlled by tents or tarpaulins thrown over the fruit. During the sweat enough air must be admitted to keep down excess of moisture. To judge this is a matter of experience. Lemons houses are also built to provide a uniform temperature; the curing has been determined to be not so much a question of temperature as of moisture. If the moisture evaporates too rapidly a wilted and comparatively worthless lemon results. To cure lemons from a few trees or for household use we have seen boxes stacked under shed and covered closely with newspapers to prevent evaporation, the newspapers being raised occasionally to ascertain amount of moisture. The curing is sometimes hastened by placing in close rooms and subjecting to moist heat, keeping the temperature at 95 degrees. This will cure them within a few days, while the other method in a cool season may take several weeks.

Keeping Cider.

Please inform me how to keep cider sweet.—T. C. D., Lankershim.

Certain chemicals have been used for this purpose, but they are injurious to health and the pure food law will prevent sale of cider so preserved, excepting that we believe the use of benzoate of soda is permitted in limited quantities. A very reliable method is to sterilize by use of heat. Place cider in cans or bottles and set in cold water using grating of some kind to prevent contact with the bottom of the boiler. Heat water in boiler until cider is raised to a temperature of 160 degrees. Allow bottles to cool and stand a few days when the liquid is racked off and the heating process repeated. While still hot bottles are sealed.

Larger Peaches.

A short time since a correspondent of your paper asked what he should do to secure larger fruit, especially peaches. Conditions and soil may be different but here is my experience:

In the spring of 1904 I planted about half the fruit trees I thought would be necessary to supply my family. The fruit has been large in size and excellent in quality. These are the conditions: Location near Strawberry Park, Los Angeles county; mesa soil, very hard when dry but cultivates perfectly under irrigation; first trees set 20x20 feet but 24x24 feet would have been better.

The first year stable manure was spaded in between the trees and the winter's supply of ashes from the kitchen stove was scattered around the trees, thus supplying plenty of potash. Have irrigated whenever the trees seemed to need it, except that I withhold water when the fruit is ripening and late in the season to allow the new growth of wood to harden before possible freezes.

Peaches of three-fourths pound weight were not uncommon and a small Wickson plum tree bore fruit 2⅝ inches in either diameter.

I clip off nearly all the new growth from the plum trees as soon as the fruit is off, leaving perhaps six inches of the present year's growth and thin the young fruit severely in early summer; more pruning is done in the center of the tree in the winter.—G. O. Lanpher.

Stimulants.

Is kainit or gypsum a plant stimulant? Also is it advisable to apply lime at time of seeding oats, wheat or barley?—Subscriber, Orland.

It is somewhat difficult to tell what our subscriber desires. Kainit contains a large percentage of potash, hence is a fertilizer or plant food. It is not a stimulant in the sense that nitrate of soda is; strictly there are no stimulants in plant life. Gypsum is not even a plant food as it contains nothing which plants require. It does, however, improve condition of many soils. Especially, it makes available the potash in the soil. If gypsum is applied we would not use kainit. Lime, like gypsum, is more of a soil corrector than a plant food, but on sour soils and soils containing a large per cent of magnesia will be very valuable. From 500 pounds to a ton an acre is used. We may add that lime is required by all plants hence is one of the necessary ingredients of soils, but to that extent may be said to exist in practically all soils.

Sowing Lawn.

Can you advise us as to the wisdom of putting in a clover lawn this fall in this locality, and just when should it be seeded?—Mrs. H. S. Stricker, Lankershim.

Lawn can be sown in your section almost any month in the year, but it is easier in the spring or fall. It starts quicker and has some advantages when sown in the spring but if Bermuda is a pest in your section, as it is in practically every part of the state, the fall sowing is better because the Bermuda will not grow in the winter months and the clover or blue grass has a chance to become thoroughly rooted before it begins to grow with the warmer weather. If the ground has been kept wet and hoed during the summer, probably but few weed seeds will be left to bother. Some prefer to manure very heavily in the spring, spade in during the summer, wetting and hoeing constantly. This makes an excellent seed bed when cultivated and fined in the fall. If everything is ready for the sowing we would prepare ground immediately and sow when convenient.

Chlorosis.

I send leaves and fruit of orange tree. What is the trouble? Only a few branches were affected. These were taken from a long, straight limb in a large Valencia tree, presumably from sucker growth, but other twigs are also affected.—F. D., Azusa.

This is the worst case of chlorosis or yellowing of orange leaves we have even seen. The twigs also had some fruit from the size of walnuts up to full size and all of it yellow. This doubtless came from off-bloom caused by poor physical condition of the tree and soil. Hardpan will cause it, as will many other improper conditions. We would refer our inquirer to the Cultivator of August 11th, page 124. This article gives one theory of cause of chlorosis. It is a trouble which has never been thoroughly in-

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vestigated and no one can tell the exact cause. A study of the case and putting the tree in a good general condition will generally result in a cure.

Alkali Pasture.

What is best to sow for alkali land pasture?—Subscriber, Hynes.

Alfalfa makes the best pasture and will stand a certain amount of alkali. Our subscriber does not inform us as to the content of the soil, so we can not tell whether alfalfa will stand the amount he has or not. Where such crops will not succeed, salt grass or even Bermuda have been used. Bermuda is ordinarily considered a pest and is not the best of pasture. The Australian salt bush has done well but like the Bermuda is a makeshift and only desirable for such land as will not tolerate better crops.

Jelly from Tunas.

Can any reader of the Cultivator give me directions for making jelly from tunas or cactus fruit?—M. O. C., Anaheim.

We will leave this entirely to our subscribers as we never have heard of such use of cactus fruit.

Lemon Tips Curling.

Please give remedy for curl tip in lemon trees.—C. H. H., Lakeside.

We will appreciate seeing specimen of these leaves as we could not determine the trouble without examination. We have seen tips attacked by aphis, that were stunted and the leaves somewhat curled. If the curling comes from any fungous trouble the weaker Bordeaux mixture should be applied.

Possibly Old Age.

Recently bought team of old horses and fed heavily of green corn and watermelons. One of them scoured for a couple of weeks, but at the same time gained slightly in flesh and improved in general condition. Later one took sick and died; the other similarly affected, recovered. Were the green corn and melons to blame?—Subscriber, San Bernardino.

When the time comes for the healthy old horse to die he goes out in this way very often. I could duplicate case after case where the old horse was all right in the morning and scoured a little, seemed to have a little pain, and in a few minutes lay down and went to sleep. It is a natural death and if we humans lived as close to nature as the horse we should all live out the fulness of our time and without any impairment of our faculties go peacefully to our death.—M. E. S.

Sorghum Poisoning.

I planted sorghum seed in the middle of July, and on account of dry weather it has a stunted growth; only half the planting is headed, some not more than a foot high where, under proper conditions, it would have been six to ten feet high. I have read of the danger of prussic acid poisoning from stunted sorghum. Would it be dangerous to turn my cows on this field? Have never had any trouble before, but always had good growth. Also would it be dangerous to turn band of horses on it?—Subscriber, Turlock.

I know all the terrible things that are said about sorghum. I have been growing and feeding it for many years and have not had anything happen worse than one case of bloating. This proved to be very mild and was afterwards entirely avoided by feeding less of the sorghum at the first. The prussic acid talked about was found some years ago. The bulletin issued on the subject notes only two cases and no cause could be definitely assigned for the behavior of the plants. As sorghum is a dry land plant and has often suffered from drouth, that is not thought to cause the trouble. It has been found in the East that many cases of disease came from the mildewed and mouldy condition of the stalks of both sorghum and Indian corn.

This year we are in the same trouble you are and have a large quantity of sorghum that will not mature, now that the water is gone from the canals. This we have been cutting and feeding until only that less than than three feet is left. In the meantime the amount fed the cows has been gradually increased for ten days until we thought it safe to turn them into the field. I was down yesterday and after two weeks they had finished the sorghum and returned to the alfalfa in the next field. We have always fed off the second crop of sorghum to the cows and calves without anything worse happening than a few cases of scouring, so we do not fear it as a feed. Try yours slowly and I hardly think you will have any trouble.—M. E. S.

Rose Mildew.

I enclose twig of rose covered with white mildew-like substance. The rose is so situated that it gets but little sunshine. What is the trouble and what can be done?—Subscriber, Long Beach.

The best thing to prevent mildew is to plant roses where they will have full sunlight all day, but where they are already located as this one is, the only remedy is to dust with sulphur or use potassium sulphide. The use of sulphur is the simpler. Merely scatter the resublimed flowers of sulphur over the foliage when slightly moist with dew or fog. However, where the sunlight does not reach the plant so as to vaporize the sulphur, the effect is not so good. If potassium sulphide is used mix at the rate of three-fifths ounce to ten gallons water. This does not color or affect the foliage of the plant, and perhaps for plants in shady situations would be preferable.

Soap Made Without Boiling.

To five pounds of fat free from salt take one can of lye. Red Seal or any 98 per cent lye will do. Dissolve lye in three and a half pints of water, stirring until lukewarm. Heat fat to same temperature and in a fine stream add the lye to the fat, not the fat to the lye. Stir constantly until it begins to thicken and is smooth. Do not beat too long or it will separate. Line a baking tin with cloth or paper, pour in soap and when sufficiently hard cut in squares. This soap will be fine, white and hard.—Mrs. Johnson, Ripon.

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Fruits, Flowers, Sunshine, Progress—All these invite investigating beautiful Hemet Valley, Southern California. Booklet free. William Kingham, Hemet, Riverside County, Cal.

For Sale—El Cajon Grant Land. In the heart of El Cajon Valley, 30 acres of choice vineyard, large house, cottage and barn; trays, boxes, etc. Close to proposed electric line. S. B. Hawley, 1548 D St., San Diego, Cal.

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The Best Buys in farm lands in Central California can be had through us. Call or write Sterling Securities Co., Savings & Loan Bldg., Stockton, Cal.

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Fine Large Eureka Lemon and Valencia Orange trees, fine for replanting. Choice lot of fine Washington Navels. Order quickly. They are going. Home 'phone 1731. John R. King, Whittier, Cal.

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Wanted—Your work pays the expense to learn a trade that pays $5 a day, in a few months' time; electricity, automobiles, plumbing, bricklaying; actual contract jobs; 200 students last year. United Trade School Contracting Company, 647 Pacific Electric Bldg., Los Angeles, Cal.

Butterman wants a complete dairy of good cows, 75 to 150, on share; party must have alfalfa and feed, good buildings. Have had 16 years' experience in business and can give good references. For further particulars apply to Henry Grandy, Wineville, Cal.

Wanted—Washington Navel and Valencia Orange, and Eureka Lemon trees. State quantity you can supply, also sizes and lowest price. Address P. W. Cheney, 312 Byrne Bldg., Cor. 3rd and Broadway, Los Angeles, Cal.

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Household Department

THE SPELLING MATCH.

Ten little children standing in a line,
"F-u-l-y, fully," then there were nine.

Nine puzzled faces, fearful of their fate,
"C-i-l-l-y, silly," then there were eight.

Eight pairs of blue eyes, bright as stars of heaven,
"B-u-s-s-y, busy," then there were seven.

Seven grave heads shaking in an awful fix,
"L-a-i-d-y, lady," then there were six.

Six eager darlings, determined each to strive,
"D-u-t-i-e, duty," then there were five.

Five hearts so anxious, beating more and more,
"S-c-o-l-l-a-r, scholar," then there were four.

Four mouths like rosebuds on a rose-tree,
"M-e-r-y, merry," then there were but three.

Three pairs of pink ears, listening keen and true,
"O-n-l-e-y, only," then there were two.

Two sturdy laddies, ready both to run,
T-u-r-k-y, turkey," then there was one.

One head of yellow hair, bright in the sun,
"H-e-r-o, hero," then the spelling-match was won.

—New Orleans Picayune.

THEIR SYMPATHETIC FRIENDS.

THE fresh autumn wind had given Mrs. Kirkland a glowing color and brought the gleam of youth and health into her dark eyes.

"You look very blooming, Jessie," said her sick husband, admiringly from his nest o fpillows on the sitting-room couch. He held her cool hand for a moment and then, releasing it with a sigh, remarked, wearily. "A few hours away from me has done you good. I knew it would brighten you up to go out among your friends. Did you see many of them?"

"Oh, yes, Rob, and they were all very sympathetic."

Kirkland made an effort to look properly grateful. Mrs. Kirkland, smiling, sat down on a hassock by the invalid's couch and prepared to relate the details of her little outing.

"First," she said, "I went over to your Aunt Harriet's, for I knew that even the fact of your having two broken ribs, a fractured collar bone and a sprained ankle would not be in her mind a valid excuse for my not calling on her during the month that you've been ill."

"How was she."

"No worse than usual, but exceedingly bitter against automobiles. She said she was not at all surprised that you got hurt, for automobiling is a reckless and extravagant habit for people in our present circumstances There!"

"Why, didn't she know that I wasn't in our own car and that I sold ours the very day after those signed notes brought us into such trouble?"

"Yes, of course she knows that," said Mrs. Kirkland, "but your accident is a delightful justification of her present theory that all the troubles in the world grow out of automobiling, so she couldn't resist pointing a moral. However, she sent her love to you and said to say you ought to be very thankful that you still have your head on your shoulders and a roof over it.".

Kirkland made a grimace. Mrs. Kirkland went on cheerily:

"Then I dropped in to see Clara Holland. I'm afraid things are going badly with her now. Tom's been drinking again and his mother thinks it's all Clara's fault and won't even help her with the grocery bill. And her baby is sick and peevish. My heart just ached for her until she said that when she thought of what trouble you and I have had lately she felt she oughtn't to complain of her little worries. She feels dreadfully sorry for us, Bob."

"Very kind of her, I'm sure. But we can still struggle with our own grocery bill! Poor Clara means well of course."

"Yes, indeed. It was refreshing to go into the Bowers'es luxurious home after the disorder and confusion of Clara's flat. I gladly accepted Mrs. Bowers' invitation to lunch. Mr. Bowers comes home for that meal now and he looked so sturdy and handsome, notwithstanding the seventieth birthday which he celebrated last week, that it did me good to see him. He was anxious to know how you are getting on, and as I was leaving he said he had a very fatherly feeling toward you, and just as soon as you are well enough he intends coming over to give you a good talking to about the folly of signing notes for people. Don't scowl, Rob. I tell you this only because I think it almost funny. As if you didn't know more about that now than he could ever tell you!"

"Mrs. Bowers sent her love and a box of tuberoses. I left the flowers in the hall because I know you hate the odor of them."

Kirkland made another grimace. His wife continued:

"From there I went downtown to do a few errands. I met George Harris in the bookstore and he inquired after you. He said he knew you would have courage to bear illness and financial loss. He said he didn't know what he would do if he should ever have such a hard run of luck. He looked pale at the idea of such a fate."

"George never was a heavyweight," comented Kirkland, good-naturedly.

"I stopped to speak to Miss Canfield as I was going through Blankley's store. You know she is the woman who sold us the lovely Venetian lace collar you gave me last Christmas. She said she had heard of our 'reverses of fortune' and she felt very sorry for us. I thanked her, and just as I was going on she remarked, 'Well, anyway, Mrs. Kirkland, you still have your real laces. That's some comfort.' That was a consolation I had never thought of before.

"On the street car coming home I saw Mr. Bayley. He said solemnly that he had thought of us often and had intended to call to express his sympathy after a proper period, but he supposed that as yet we desired to see no one but our most intimate friends."

"I hope you assured him that was the case."

"I didn't urge him to call immediately. Do you wonder, Rob, that I felt very happy when I got back to our cozy and peaceful home, where there was no one to remind me of troubles that don't count—that don't matter in the least bit so long as we have each other and you are getting well so fast?"

"You dear girl!" was all the answer Kirkland made.

HAMBURG STEAK.

This name is commonly given to inexpensive cuts of beef chopped, seasoned a little, shaped into small balls or into one large thin cake, and quickly broiled in the way that a tender steak would be. Owing to the quick cooking much of the natural flavor of the meat is developed and retained. The fact should be kept in mind that Hamburg steak must be made from fresh, well-ground meat. It is much safer to chop the meat at home, as chopped meat spoils very quickly. Much depends, too, upon browning it sufficiently to bring out the flavors. Many cooks think that Hamburg steak is improved if the meat is mixed with milk before it is cooked.

In some parts of the country, and particularly in some of the Southern States, two kinds of beef are on sale. One is imported from other parts of the country and is of higher price. The other, known locally as "native beef," is sometimes lacking in flavor and in fat and is usually tougher. Southern native beef such as is raised in Florida is almost invariably, however, of extremely good flavor, due presumably to the feed or other conditions under which it is raised. By chopping such meat and cooking it as Hamburg steak, a dish almost as palatable as the best cuts of the more expensive beef may be obtained. In such cases, however, it is desirable because of the low percentage of fat to add suet or butter to the meat. The reason for this is that in the cooking the water of the juice when unprotected by fat evaporates too quickly and leaves the meat dry. This may be prevented by adding egg as well as fat, for the albumen of the egg hardens quickly and tends to keep in the juices. The proportion should be one egg to one and one-half pounds of meat.

SAVORY ROLLS.

Savory rolls in great variety are made out of chopped meat either with or without egg. The variety is secured by the flavoring materials used and by the sauces with which the baked rolls are served. A few recipes will be given below. While these definite directions are given it should be remembered that a few general principles borne in mind make recipes unnecessary and make it possible to utilize whatever may happen to be on hand. Appetizing rolls are made with beef and pork mixed. The proportion varies from two parts of beef and one of pork to two of pork and one of beef. The rolls are always improved by laying thin slices of salt pork or bacon over them, which keep the surface moistened with fat during the roasting. These slices should be scored on the edge, so that they will not curl up in cooking. The necessity for the salt pork is greater when the chopped meat is chiefly beef than when it is largely pork or veal. Bread crumbs or bread moistened in water can always be added, as it helps to make the dish go farther. When onions, green peppers, or other vegetables are used, they should always be thoroughly cooked in fat before being put in the roll, for usually they do not cook sufficiently in the length of time it takes to cook the meat. Sausage makes a good addition to the roll, but it is usually cheaper to use unseasoned pork meat with the addition of a little sage.—U. S. Bulletin 391.

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A GOOD WORD FOR THE FRIVOLOUS.

"Our besetting sin is to be too serious and set too high a value upon sobriety," says Margaret E. Sangster in the Woman's Home Companion for August. "I hold a brief for pure fun. Laughter is wholesome; mirth does more good than medicine. Not merely when we are on a holiday, but in mid-current of the daily round we are the better for an interlude of amusement. The person who was born without a sense of humor is greatly to be pitied. No situation is intolerable if one can see the fun in it. When I hear or see condemnation of a girl's gaiety, I am forced to the conviction that the grave censor never had a girlhood worth the name or else was born under a baleful star. Immoderate giggling belongs to a transient phase and should not be reproved when children are in their teens; rather it should be rejoiced in, and their elders look back in tender wistfulness on their own days of such thoughtless delight. Be as frivolous as you please, dear maiden and matron, in the summer days and be assured that in its place frivolity is the sunshine that dances on the wave. Some of the most portentous people one meets, people solemn and severe, and given to frowning, are fools underneath their masks. Some of the lightest hearted, gayest and most winsome in their capacity for seeing fun and making it are among the great and wise. If one has no native sense of humor, one should endeavor by every legitimate means to acquire it. An evening spent at a play which from the first act to the last scintillates with jests and irresistibly provokes mirth is a boon to tired folk; so, too, is an hour with a novel in which the serious underlying purpose is illuminated by flashes of fun on a summer day or a winter afternoon."

LINEN WALKING-SKIRTS.

The walking-skirts in linen, as a rule, clear the ground by full two inches. Practically all of them are pleated. English models are rather conventional and are followed by the majority of American tailors. They are made with side-pleated skirts, the pleats turning back from a narrow centre-front box pleat and meeting in the back, where they fasten.—Harper's Bazar.

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San Francisco and Los Angeles Produce Markets

Los Angeles Markets

LOS ANGELES, Sept. 14, 1910.

Butter.

Heavy receipts of local butter last week. Prices remain the same on all grades.

Price to trade 2½c in advance of the following Produce Exchange quotations:

Extras	.32½
Firsts	.31
Cooking	.25

Cheese.

Northern fresh	17@17½
Anchor, large	.18
Oregon Daisy	.19@20
Imported Swiss	.30
Domestic Swiss	.22@24

Eggs and Poultry.

All grades of eggs are in strong demand. Prices on local ranch show no change. Others are mounting.

Paying price f. o. b. L. A. is:

Local ranch candled	.43
Case count buying price	.39
Eastern fresh	.35
Eastern Storage	.30@32

Dealers pay for live poultry f. o. b. L. A.:

Hens, per lb	.17@19
Roosters	.8@16
Broilers	.17
Fryers and Roasters	.17@18
Turkeys	.22@26
Geese	.15
Ducks	.16
Squabs, per doz.	.1.50

Live Stock.

The following quotations are f. o. b. Los Angeles, on all stock:

Hogs, 175 to 200 lbs	.9½
Prime Steers	.5
Heifers	.4@4½
Calves, per lb	.6½
Sheep ewes, per head, shorn	.4.00@4.50
Lambs, per head	.3.50
Wethers, shorn	.4.00@4.50

Potatoes.

Wholesale prices are:

Local Burbanks, ctl	.1.25@1.40
Highlands	.1.30@1.50
Salinas	.1.60
Sweets, Yellow, per ctl	.2.00

Onions.

Wholesale quotations:

Yellow Danvers	.1.40@1.50
Australian Browns	.1.40@1.50
Garlic	.7

Vegetables.

Wholesale quotations:

Asparagus	.15
Artichokes, northern, doz.	.1.00
Beets, sack	.90
Beans, green	.3@4
Beans, Limas	.6
Brussels Sprouts	.9@10
Bell Peppers, lb.	.4@5
Green Chilis	.3@4
Cabbage, per sack	.90@1.00
Cucumbers, per box	.35
Celery, crate	.2.25@2.50
Cauliflower, per crate	.1.50
Carrots, per sack	.90
Egg Plant, per lb	.4
Green Corn, box	.35@50
Green Onions, per doz. bunches	.20@35
Lettuce, choice, per crate	.1.00@1.25
Leeks, per doz	.35
Okra, lb	.5@6
Peas, per lb	.7
Pumpkins, lb.	.1@1½
Parsley, per doz. bunches	.25
Parsnips, doz. bunches	.20@25
Radishes, per dozen bunches	.10@15
Rhubarb, crimson winter	.1.00
Spearmint, doz. bunches	.30@35
Spinach, per dozen	.20@25
Hubbard Squash, lb	.2
Summer Squash	.35
Turnips, sack	.90
Water Cress, doz. bunches	.25@35
Tomatoes lug	.25@50

Citrus Fruits.

Valencias	.4.00
Grapefruit	.2.50@3.75
Lemons	.4.00@5.00

Fresh Fruits.

Wholesale prices on the market are:

Alligator Pears	.3.00@4.00
Apples, Bellflowers	.85@1.15
Gravensteins	.1.00@1.60
Greenings	.75@1.00
W. W. Pearmains	.1.00@1.25
Fall Pippins	.85@1.00
Crabapples	.1.50
Casabas	.1.50
Cantaloupes, crate	.3.00
Figs, box	.1.00@1.25
Grapes, lug	.60@1.25
Grapes, Tokays	.1.25@1.50
Pears, box	.75@1.80
Bartletts	.2.00@2.50
Strawberries	.8
Raspberries	.10
Blackberries	.8@9
Peaches, box	.75@1.00
Plums, box	.1.50
Prunes, box	.1.50
Quinces, box	.1.00
Watermelons, lb.	.1@2

Dried Fruits.

Wholesale prices are:

Apricots	.12½@14
Evap. apples, fy., per lb.	.8½
Peaches	.7½@9
Pears	.10@12
Nectarines	.7½@9
Prunes	.4½@10
Plums	.10

Beans Dried.

Wholesale quotations:

Limas	.4.75
Black eyes	.5.75
Pink, No. 1	.6.50
Lady Washington	.4.50
Small white	.4.50
Garvanzas	.4.50
Lentils	.8.00

Nuts.

Wholesale quotations are:

No. 1 soft shell walnuts	.15@16
No. 2 soft shell	.10
Almonds, IXL, per lb.	.17
Pecans, polished	.15@16
Peanuts, Eastern	.7@7½

Honey.

Wholesale quotations:

Extracted water white	.8½
Extracted light amber	.7
Comb W. W.	.18
Light amber	.14
Beeswax	.30

Hay.

Buying prices f. o. b. cars L. A. are:

Barley hay	.8.50@10.50
Alfalfa	.9.00@10.00
Wheat hay	.10.00@11.00
Tame oat	.10.00@12.00

Grain.

Wholesale selling price f. o. b. Los Angeles:

Wheat, new, per ctl	.1.90@1.95
Corn	.1.80
Egyptian corn	.1.85
White oats	.1.90
Seed Rye	.2.10
Seed Barley	.1.30

Feed Stuff

Wholesale selling price f. o. b., Los Angeles:

Cracked Corn	.1.85
Cracked Wheat	.2.05
Shorts	.1.80
Bran	.1.55
Oil cake meal	.2.50
Feed Meal	.1.90
Rolled Barley	.1.25

San Francisco Markets

SAN FRANCISCO, Sept. 13, 1910.

Butter.

Since last week's quotations extras reached 32½ cents, but under accumulated supply have dropped to 31. Firsts and seconds also lower.

The official quotations of the San Francisco Wholesale Dairy Produce Exchange for today are as follows:

California extras, per lb.	.31
California firsts	.30
California seconds	.28
Dairy	.28

Cheese.

California flats, new	.12½@16
Cal. Young Amer. fy. new	.15½@16

Eggs and Poultry.

Eggs are advancing on all grades. Demand is very good.

Official quotations of the S. F. Wholesale Dairy and Produce Ex. are:

Fresh ranch extras	.40
Firsts	.38
Seconds	.30
Hens, per doz.	.5.00@10.00
Roosters, per doz.	.5.00@8.00
Fryers, per doz.	.4.00@5.00
Ducks	.4.50@8.00
Broilers	.2.50@3.25
Spring Turkeys	.26@30
Geese	.1.50@2.00
Pigeons	.1.50@2.25
Squabs	.2.25@2.50

Live Stock.

San Francisco prices gross weight:

Steers	.3¾@5¼
Cows and heifers	.2¾@4¼
Hogs	.6@9½
Calves per lb.	.4½@6
Milk Lambs, unshorn	.6@6¼
Wethers No. 1	.4½@4¾
Ewes No. 1	.4@4¼

Potatoes.

Wholesale market quotations:

River White, new box	.75@1.00
Salinas Burbanks	.1.30@1.50
Merced Sweets, lb	.2@2½

Vegetables.

Wholesale quotations:

Artichokes	.25@40
Beans, string, per lb.	.2@2½
Beans, Lima, lb.	.2@3
Cucumbers, box	.40@50
Celery, per crate	.90@1.50
Chili Peppers, per box	.25@40
Bell Peppers	.6@7
Green Corn, sk	.75@1.75
Egg Plant. per box	.35@50
Lettuce, per crate	.4.50@5.00
Okra, box	.30@40
Peas, per lb	.4@5
Rhubarb, box	.50@75
Summer Squash, box 25 lbs.	.30@50
Tomatoes	.25@50
Garlic	.2½@3

Onions.

Onions, sk.	.75@80

Citrus Fruits.

Valencias	.2.50@4.00
Grapefruit	.1.50@3.50
Lemons	.2.50@5.50
Limes	.6.00@6.50

Fresh Fruits.

Apples, box	.50@1.10
Apples, Gravensteins	.1.25@1.40
Apples, Bellflowers	.1.00@1.15
Cantaloupes, crate	.1.75@2.00
Crabapples	.50@1.00
Muskmelons	.2.00@2.50
Nutmegs	.50@75
Figs, box single	.40@65
Grapes, seedless	.40@60
Grapes, Muscat	.40@65
Grapes, Tokays	.40@60
Grapes, wine, ton	.10.00@15.00
Huckleberries, lb.	.5@10
Pears, Winters	.50@85
Bartletts, wrapped	.1.50@2.00
Peaches	.60@85
Persimmons, box	.1.25@1.50
Nectarines, red	.40@90
Quinces, box	.60@90
Pomegranates, box	.50@1.00
Plums and Prunes, crate	.75@85
Blackberries, chst.	.4.00@6.00
Raspberries, chst	.6.00@8.00
Strawberries, chst	.4.00@6.00
Pineapples, doz.	.2.50@3.00
Watermelons, per doz.	.1.00@2.00

Dried Fruits.

1910 crop, f. o. b., carload lots, per lb.: Apples, 7@8¼c; Apricots, 11@13c; do, Moorparks, 13@13½c; Peaches, 5½@7½c, with premium of ⅛@¼c on Muirs; Prunes, Santa Claras, 5¼@6c, with ½@¾c premium on 40s; Figs, 4¾@6½c for White and 4¼@4½c for Black; Pears, 9¾@13c.

RAISINS—1909 crop, seeded, per pkg.: Fancy, No. 16, 5¼@5⅜c; do. choice, 4¾@4⅞c. Loose Muscatels, in 50-lb. bxs.: Standard, 4-crown, 4¼; do. 3-crown, 4c; do. 2-crown, 3½c.

1910 crop, futures—London layers, in 20-lb. bxs.: 6-crown clusters, $2.25@2.50; do. 5-crown, $1.75@2; do. 4-crown, $1.25; 3-crown layers, $1; do. 2-crown, 95c. Seeded, per pkg.: Fancy, No. 16, 6c; choice, No. 16, 5½c. Loose Muscatels, in 50-lb. bxs.: Standard, 4-crown, 5¼c; do. 3-crown, 4½c; do. 2-crown, 4c. Dried grapes, 2¾@3c. Seedless—Muscatels, 3¼@3½c; Sultanas, 3½@3¾c; Thompsons, 4¼c.

Nuts.

Walnuts, S. S. No. 1	.13½
Walnuts, hard shell	.13
Almonds, '10 N. P. U.	.14½
Almonds, '10 Nonp	.16½
Almonds, '10 I X L	.15½
Pecans	.14@15
Chestnuts	.14@15

Beans Dried.

Limas	.4.50
Pink	.6.50
Black eyes	.5.60@5.75
Small white	.3.90
Large white	.3.85
Kidneys	.6.75@7.00
Garvanzas	.3.25
Bayo	.5.50
Horse beans	.2.00
Red Mexicans	.6.00
Cranberry	.4.50@4.75

Hops

Hops, 1909 crop	.10@15
Hops, 1908 crop	.8@10

1910 contracts now being made at 12@14 cents.

Honey.

W. W. Comb '10	.15
Dark Comb	.12½
Extracted W. W.	.8
Extracted, dark	.6½
Beeswax, per lb.	.24@30

Hay.

Scott, Magner & Miller says:

Arrivals of hay for the week have amounted to 5000 tons; this is considerably less than the average that we have been receiving on the San Francisco market for the last few weeks. It is a good thing that shipments have decreased to this extent, for if we had continued to receive as much hay as has been coming of late, it would have been nearly impossible to have handled it here to any satisfaction.

The condition of the market has remained just about as it has been for the last few weeks. Arrivals have been so large and have continued to come so steadily that it has been most difficult to obtain movement of the hay from the cars and boats from day to day.

The bulk of the hay that has been arriving has been marketed here at between $8.00 and $10.00 per ton. Any hay selling above $10.00 must be something exceptionally nice. Purchases in the country of late have been decidedly light, as there has been no attraction in the situation to induce operations to any extent.

There has been some hay shipped lately for export account and the demand for coastwise shipment has also improved a little.

Alfalfa hay has been arriving freely and has been readily sold at full quotations. Shipments of alfalfa to the northern coast cleared this market of any accumulations or surplus, leaving the situation in good shape.

Fancy wheat	.12.00@12.50
No. 1 wheat or wh and o	.9.50@10.50
No. 2 wheat or wh and o	.$8.50@9.00
Choice tame oat	.10.50@11.50
Other tame oat	.8.00@9.50
Wild oat	.7.00@9.00
Stock hay	.5.00@6.00
Alfalfa	.9.00@12.00
Straw	.40@50

Grain.

Wheat No. 1	.1.55@1.62½
Barley, good to choice	.97½@1.00
Barley, poor to fair	.92½@95
Oats, white	.1.55@1.60
Rye, new crop	.1.65@1.70
Corn, large yellow	.1.55@1.60
Alfalfa seed	.14@15
Mustard brown	.4½
Millet	.2½
Flaxseed	.5@5½
Broom corn seed, per ton	.23.50

Feed Stuff.

Bran, per ton	.25.00@26.00
Feed cornmeal, per ton	.36.00@37.00
Cracked corn	.36.00@37.00
Ground barley, per ton	.22.00@23.00
Rolled oats, per ton	.30.00@32.00
Middlings	.34.00@35.00
Oil cake, per ton	.40.00@41.50
Cocoanut cake per ton	.26.00
Mixed feed, per ton	.24.00@27.00
Shorts	.27.00@28.00

Deciduous Market

SACRAMENTO, CAL., SEPT 10, 1910.

The following from the circular of the California Fruit Distributors gives number of cars of deciduous fruit shipped from all points in California for the week (7 days) ending Friday morning, September 9th, 1910.

Peaches.

154 cars: Shipment of this week shows a marked falling off from the preceding week and the difference will be even greater in the seven days to follow. Salways are now practically done and there is not a great deal of stock available outside of Levy's Clings.

Pears.

52 cars: Shipment of this fruit shows a further falling off and as is the case with peaches this will be even more noticeable during the coming week. The crop is now practically shipped.

Grapes.

301 cars: Grape shipments consist almost entirely of Tokays, although there are few Malagas moving in car lots and small shipments of other varieties such as Black Morocco and Cornichon are now going forward in assorted cars. The grape movement has been a little less than was expected this week, and from present appearances will remain at about the same figure for the week to follow. Stock is universally admitted to be much finer than usual.

Weather conditons remain exceedingly favorable. With warm days and cool nights the coloring of the fruit is going on rapidly and these conditions are also favorable to the full and perfect development of the fruit.

Citrus Market

LOS ANGELES, Sept. 14, 1910.

Probably not 500 cars of Valencias are yet to go and this small quantity forces proper consideration of the merits of the fruit, and fair prices are being maintained in every market. Another favorable feature is the cleaning up of the the low grade 'dry" fruit. Though a little of it still appears at times, the bulk of such stock is out of the way. The green colored fruit is still on hand, but fortunately this is getting no worse as the season advances. Last week's quotations, or even better, are being maintained.

The lemon market is not only holding its own, but probably is even better than a week ago. Foreigns are in light supply and nearly all sections, and especially the Southern states, are exhibiting keenest desire to secure California fruit.

Shipments.

Shipments of all citrus fruits to date since November 1, 1909: 29,093 cars, of which 24,603 were oranges and 4490 lemons. To same date last year: 36,543 cars, of which 30,600 were oranges and 5943 lemons.

NEW YORK, Friday, Sept. 9.—Four cars sold; market unchanged; cloudy and warm.

VALENCIAS—	Avge.
Gabriella XC, Independent Ft. Co.	.$3.15
Citrus Belle SD, Ind. Ft. Co.	2.30
Champion CH, A. C. Denman & Son	2.20
Climax OR CH, E. Peycke Co.	1.70

Pointer, ACG Exchange	2.60
Hunter, ACG Exchange	1.75

LEMONS—Plain, $3.05.

GFAPEFRUIT—HALVES—Champion Fy. Seedling, $4.15. Seedless, $4.05; BOXES—Champion Fy. Seedlings, $6.25. Choice, $6.00. Seedless, choice, $5.65.

CHICAGO, Friday, Sept. 9.—Lemons are steady and selling in a fair way and trade is not large. Boxes, California choice, $4.50@4.75; extra choice, $5.00@5.50; common, $3.75.

Oranges are in small supply and steady. Boxes, late Valencia, extra choice, $4.25@4.50; choice, $3.50@4.25.

CLEVELAND, Friday, Sept. 9.—One mixed car and 2 cars lemons sold. Market higher on good stock oranges, easier on lemons. Cool.

VALENCIAS—	Avge.
Robusta, A. H. Ex., Pachapa	$3.05
Hobo (No. 1), Pachapa	1.80
LEMONS—	
Palm Tree, A. H. Ex., Prenda	3.00
Squirrel, A. H. Ex., Prenda	4.05
GRAPEFRUIT—	
Squirrel, A. H. Ex., Pachapa	2.30

BOSTON, Friday, Sept. 9.—Two cars sold. Weather cool; cloudy. Market unchanged.

VALENCIAS—	Avge.
Rey St. Ex., Fernando	$3.85
Topaz, XC, CCU	2.85
Tunnel St Ex Fernando	2.60

PHILADELPHIA, Friday, Sept. 9.—Two cars Valencias and one car lemons sold.

VALENCIAS—	Avge.
Alhambra, S. T. Ex., E. Alhambra	$2.25
Colombo, S. T., Alhambra	1.40
Don Quixote, S. T., E. Alhambra	2.45
Knight, O. R., Ely-Gilmore	3.95
LEMONS—	
Euclid, O. R., Growers Ft. Co.	6.05
Plain	4.45
Flower, S. D., Ely-Gilmore Ft. Co	3.50

ST. LOUIS, Friday, Sept. 9.—Cool. Market weak on small sizes. Two cars Valencias, one mixed car and one car lemons sold.

VALENCIAS—	Avge.
Eagle, A. F. Ex., Highgrove	$1.65
Premium, O. R., Benchley Ft. Co.	4.50
Yellow Beauties, A. F. Ex., High.	1.60
Superior, C. H., Benchley Ft. Co.	3.80
LEMONS—	
Lone Palm, X.C., McGowan Willard	2.25
Loma, C. H., Limoneira Co.	3.30
Beach, S. D., McGowan Willard	2.00
SWEETS—	Avge.
Yellow Beauties, A. F. Ex., Highgrove	$1.40

CINCINNATI, Friday, Sept. 9.—Warm. Market steady on good stock lemons, weak on oranges; one car sold.

LEMONS—	Avge.
Selected Fy CH, N. W. Blanchard	$4.25
Loma CH, Limoneira Co.	4.15

PITTSBURG, Friday, Sept. 9.—No auction sale.

NEW YORK, Monday, Sept. 12.—Eight cars sold. Market steady on good fruit, but weak on poor. Cool and clear.

VALENCIAS—	Avge.
Planet, S. S. Exchange	$3.75
Don Quixote, S. E. Exchange	1.80
Whittier, S. T. Exchange	3.60
Pico, S. T. Exchange	2.40
Niagara, fy., Stewart Ft. Co.	4.65
Symbol, Stewart Ft. Co.	3.90
Titus Ranch, fy., San Marino GPA	3.10
El Molino, ch., San Marino G. P. A.	2.85
Gabriella, xc., Independent Ft. Co.	3.95
Citrus Belle, sd., Independ't F. Co.	2.80

CHICAGO, Monday, Sept. 12.—Lemons, trade is fair and there are good offerings. Quotable.

Boxes, California choice, $4.50@4.75; extra choice, $5.00@5.50; common, $3.75.

Oranges, market quiet and steady. Boxes late Valencia, extra choice, $4.25@4.50; choice, $3.50@3.75.

PITTSBURG, Monday, Sept. 12.—Market firm on oranges and lemons. Warm.

VALENCIAS—	Avge.
Tiger, S. B. Exchange, Colton	$2.30
Iris, D. M. Exchange, Duarte	5.10
Floral, S. B. Exchange, Colton	1.10
Violet, D. M. Exchange, Duarte	3.90
Del Oro, ch., Sparr Ft. Co.	1.00
LEMONS—	
Pet, S. A. Exchange	$3.40
Crackshot, or., Sparr Ft. Co.	4.65
Greyhound, S. A. Exchange	2.50

ST. LOUIS, Monday, Sept. 12.—Weather favorable. Market firm, but weak on small sizes. Two cars Valencias and one of lemons sold. Four cars on track.

VALENCIAS—	Avge.
Pointer, A. C. G., Ex., Charter Oak	$2.90
Hunter, A. C. G. Ex., Charter Oak.	2.50
LEMONS—	
Family, Q. C. Ex., Corona	2.70

PHILADELPHIA, Monday, Sept. 12.—One car Valencias and one of lemons sold.

VALENCIAS—	Avge.
Whittier, S. T. Ex., Whittier	$4.50
Pico, S. T. Ex., Whittier	3.55
LEMONS—	
Liberty, E. F., Escondido	5.70
Foxaway, E. F., Escondido	5.15

BOSTON, Monday, Sept. 12.—One car sold. Weather favorable. Market strong on good fruit.

VALENCIAS—	Avge.
Planet, S. S. Ex., Orange	$4.65

CLEVELAND, Monday, Sept. 12.—One car Valencias and one car lemons sold. Prices on lemons higher. Warm.

VALENCIAS—	Avge.
Jasmine, D. M. Ex., Duarte	$2.10
LEMONS—	
XXX, S. T. Ex., Leffingwell	4.80
Sourball, S. T. Ex., Leffingwell	3.15

THE RUSSIAN THISTLE.

Continued from Page 243.

Leaves long and needle-like, averaging from ½ to 3 inches. The tip is armed with a sharp spine.

Flowers borne in the axils of the leaves and protected by the spiny bracts. Color, white to purple, with prominent yellow stamens.

Seed made up of a long green embryo coiled so as to be in the form of a round flattened snail-shell. It is attached horizontally and becomes dark when ripe. The covering consists only of a thin skin, with no protecting coat. This lack of albumen makes it impossible for the seed to remain long in the ground without germinating and is an important factor in the methods for controlling the weed. The vitality of weed seeds is very important when we consider methods of combating them, for it is difficult to eradicate a weed when its seeds may germinate any time within fifteen years. This is true of mustard, clover, wild carrots, and corn. Pumpkins, peas, beans, etc., germinate almost entirely in one year, and to this class belongs the Russian Thistle.

It is very improbable that any of the seeds of the thistle will remain vital in the ground for a longer time than 2 years, while the great majority of them germinate before the end of the first year. If buried shallow the germination is much more rapid than when buried deep in the soil. All dry weeds then should be plowed under very shallow in the fall of the year and most of the seeds will germinate early in the spring.

In the laboratory, under favorable conditions, the seeds have been germinated in 10 hours.

It is interesting to note that the seeds will not produce well if sown on wet soil. It is strictly a dry soil pest, and a wet spring is unfavorable to its growth.

Destructiveness.

"A weed new to America made its appearance a few years ago in the wheat-raising region of the Northwest, and has already caused damage to the estimated amount of several millions of dollars. Spreading rapidly as it is over a new territory and becoming more destructive in the region already infested, it threatens serious consequences unless prompt measures are taken to subdue it."—Bull. 15, U. S. Dept. of Agri., 1894, p. 7.

As a pest to cultivated crops, the Russian Thistle cannot be compared to Morning Glory, Canadian Thistle. Johnson Grass, or White Malva. But to grain and uncultivated crops it is the worst weed pest known. It not only crowds out all other growths, but takes from the ground a large amount of nourishment which is always needed in a grain field.

In reproduction it is remarkably prolific. The following worked out by Mr. L. H. Dewey will give some idea of this:

"A single plant of average size, two to three feet in diameter, and weighing two to three pounds at maturity when dry, is estimated to bear 20,000 to 30,000 seeds. Single plants have been found six feet in diameter, weighing about 20 pounds when thoroughly dry, and estimated to bear 200,000 seeds. At maturity the heaviest and strongest parts of the plants are the seed-bearing twigs. The inner branches receive little of the wear incident to tumbling about and are only strong enough to hold the plant together."

Methods of Control.

In controlling weeds we have two distinct classes to deal with, according to the method of growth. One class is constantly sending up new shoots from an underground stem and can be controlled only by constant summer knifing. To this class belong Morning Glory, Canadian Thistle, Johnson Grass, and White Malva. They are especially harmful to such cultivated crops as beans, beets, berries, and other small fruits. To the second class belong plants with only one tap-root from which must come all nourishment to produce seed for next year. They are absolutely dependent upon seed for reproduction, while the members of the first class may be produced by seed, but usually from a growth on the underground stem. To this last named class belong the tumbleweeds including the Russian Thistle. In the methods of control, then, we are to deal with a plant when once cut off destroyed forever, and if cut off before the seeds mature, the next generation is immediately stopped. The main thing is to know when and now to go about the work in the different crops.

Hay and Grain.—This year is the time to prepare for next year's crop. As soon as the hay is baled the ground should be plowed shallow, so as to enable most of the seeds to germinate before time for the first spring plowing. If the last crop was left for grain and headed, the stubble should be burned. The heat from the fire alone will destroy a large percentage of the seeds, for it has been proven that the thermal death point is between 72° and 78° C. By plowing after burning the grower will find few thistles the next year. In burning great care must be taken not to fire the brush on the hills, or other uncut grain. It may be impossible for the foothill farmers to fire on this account.

The spring plowing will destroy what seeds have germinated after the fall plowing, and the next important step is to get the grain in before a dry spell, so that it may get a start of the thistle.

In some localities it has been necessary to resort to summer fallow, but in this county much of the land will raise cultivated crops, and the pest is easily controlled by cultivation.

In sowing it is of course important to sow clean seed. Farmers in the infested district should not plant seed raised on their own land, and farmers in other parts of the country must avoid seed from infested areas.

No flax, wheat, barley, oats, millet, alfalfa, clover, nor other grain or grass seeds, nor shelled corn should be obtained from the farms in Ohio, Indiana, Illinois, Michigan, Iowa, Wisconsin, North or South Dakota, Nebraska, Kansas, Idaho or Canada, for planting until the grower has first made sure that such imported seed has not been raised in a Russian Thistle district.

"Oats, when properly grown, often choke out the thistles, and hence escape injury. If, on the other hand, they are sown thinly or on poorly prepared land, the thistles may completely ruin the crop. Millet, the only grass largely cultivated for hay in the Dakotas, is such a rank plant that it is injured very little by any weed."—L. H. Dewey.

Crop Rotation.

The possibilities offered by this system of eradication in this county make the problem here much simpler than in some other places where only hay and grain can be grown.

Much of the land shown in the chart as infested with the weed is now in orchard and cultivated crops.

Over five hundred acres in the neighborhood of Simi are in sugar beets, and where properly hoed the thistle is not to be found, while in other poorly tended fields it is yet a pest. Of course, it is not an easy task to take a badly infested field and keep it clean without great expense and effort, but after the first year it ceases to exist as a pest in a cultivated field, and the field may again be sown to hay or grain.

Higher land, unsuitable for beets, produces good beans and offers the same opportunities for cultivation and hoeing as sugar beets. One of the best examples of bean raising as a method of combating the thistle is on J. Rousse's place, situated in the very heart of the Russian Thistle district. He planted beans this year on a piece which was very badly infested in years past, and today it is practically free from weeds. By rotating in this way, and reclaiming his land he will soon have a clean place. Other farmers can do the same thing, greatly to their own profit.

Other local farmers have also demonstrated the practicability of crop rotations as a method for controlling this weed by planting not only beans, beets, and cultivated crops, but alfalfa as well. This crop, constantly irrigated and cut soon does away with the thistle.

Orchards demand repeated summer cultivations and give the best possible opportunity of getting rid of the thistle, though some young orchards have lacked proper care and cultivation. Here the weed is never able to do material damage, except by sapping the ground.

I should recommend, then, that the system of rotating crops be employed by all farmers whose land is capable of such a method, which includes practically all of the now infested area.

On Highways.

It is useless to clean up infested fields if the weeds are allowed to grow and mature along the public and private roads. Such is the case at present ,along private roads.

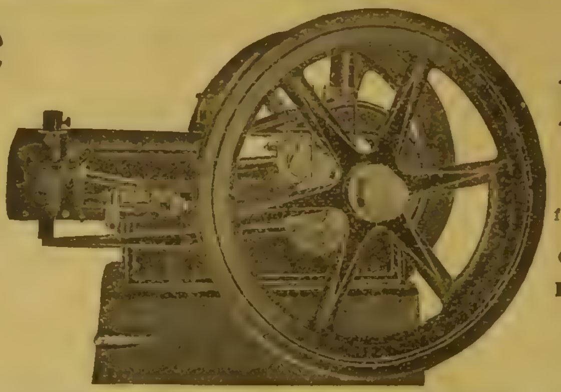
The Southern Pacific R. R. Company has also co-operated in the work and has given orders to keep it from its tracks. In the barnyards, corrals and fence corners the weeds must be removed to prevent reseeding the fields.

Co-operation and Concerted Action Necessary.

The one important factor necessary in the eradication of this pest is concerted action of all the farmers. It is useless for one man to clean up his fields if the first winter wind is going to bring a host of rolling thistles from his neighbor's place to reinfest his own. Such is too often the case.

Important.

1. Let no weeds seed.
2. Get grain in early.
3. Fire stubble, if possible.
4. Plow immediately after the crop has been harvested.
5. Plow shallow.
6. Destroy the weeds now before the seed ripens.
7. Plant cultivated crops or alfalfa.
8. Co-operate with your neighbors and with the county commissioner.



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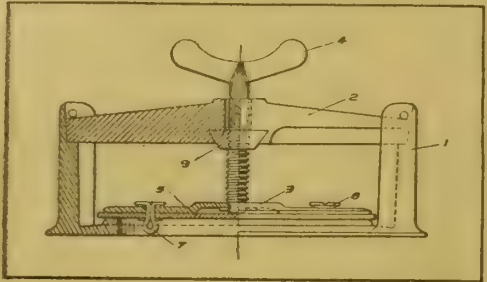

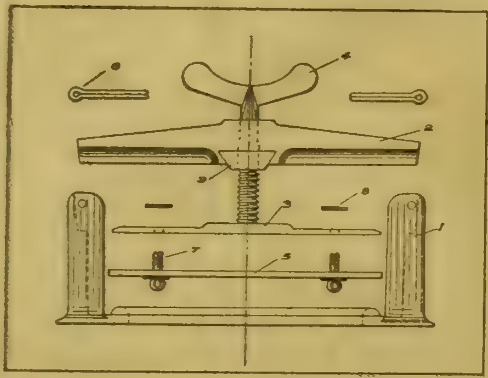

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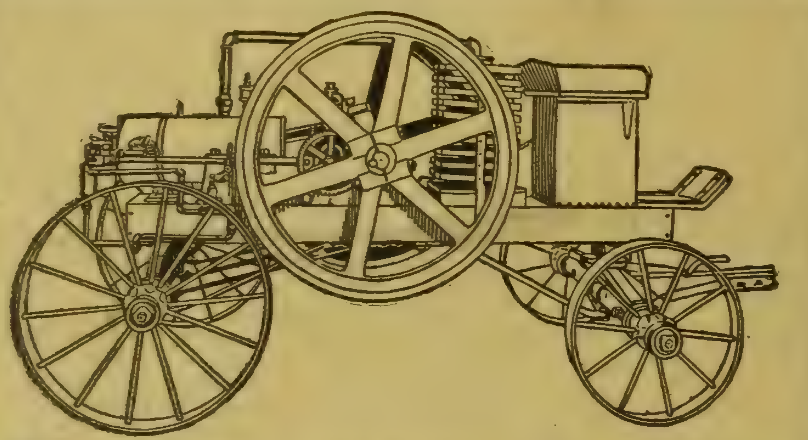

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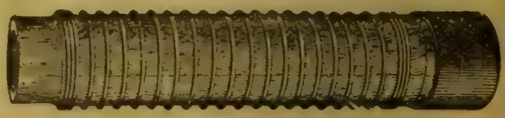

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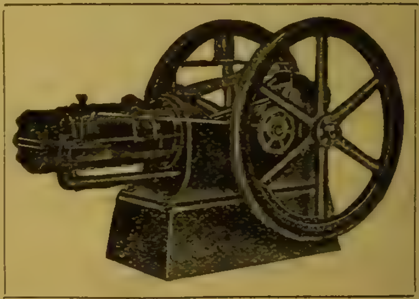

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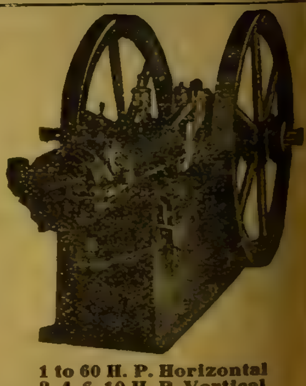

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Los Angeles September 22, 1910 San Francisco

The Citrus Convention with a Message

Growers of California are asking, "At what age shall the Orange Tree be Oslerized?"

FROM ORANGES TO SNOW IN THE POMONA VALLEY.

THE conservation of citrus orchards, or the preventing of decadence of trees which have reached the age of fifteen to twenty-five years, was the topic considered at the Pomona meeting of citrus growers. The discussions brought out many divergent reasons for trees ceasing to bear profitable crops. Among them are:

Natural stage of old age where the only remedy is removal and planting of new trees. Heredity. Seed and buds not selected with idea of longevity. Variations or mutations of buds. Overworking trees, then neglecting them. Lack of proper pruning to admit air and light to all parts. Suckers allowed to grow up through top, taking sap and ultimately smothering out lower parts. Lack of fumigation or spraying, permitting fungous and insect troubles to lower vitality. Too much spraying, especially with distillate. Covering leaves and clogging pores with road dust or dust from cement works or factories, thus preventing proper elaboration of sap. Soil unfit when tree was planted or made unfit for best work of roots by improper tillage. Too little humus. Too much nitrogen. Lack of aeration which might be corrected by deep tillage or tile draining. Too much subsoiling or disturbing of roots lessening power of securing nourishment. Too shallow culture permitting formation of hardpan or plow-sole for which the remedy is sub-soiling. Sub-soil too close in texture and holding too much moisture, or else too open which permits loss of water and fertility. Deposits of silt about tree making impervious sediment which creates unhealthy conditions. Trees set too deep. Trees not set deep enough. Too many trees to the acre, preventing access of light and air. Lowering of vitality by frost or continued cold.

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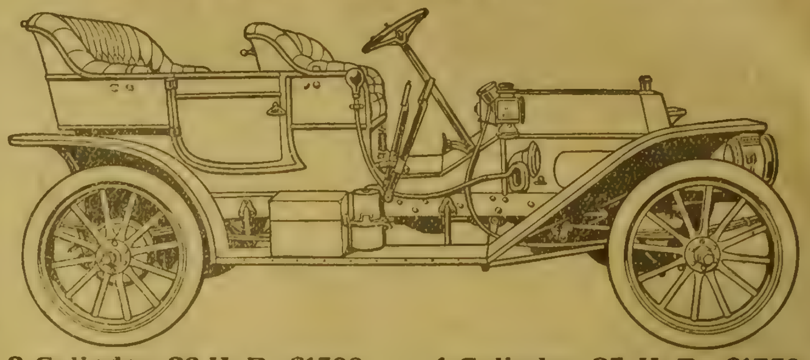

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California Cultivator

Vol. XXXV—No. 12 Los Angeles, California, Thursday, September 22, 1910 Subscription $1 a Year

Longer Life Through Seed and Bud Selection

Address by William Wood of Whittier before the State Citrus Growers Convention

IT has been said by many growers who have observed the growth and fruitfulness of citrus orchards in Southern California in the past twenty-five or thirty years that citrus orchards of the more recent planting do not thrive and yield as good crops as did orchards of the first planting —age of orchards being equal; that citrus trees of the first planting were not nearly as subject to disease as they have been in the later planted orchards; that, in orchards of the more recent planting, many trees begin to decline and the fruit to deteriorate at a much earlier age than did the first orchards; and that this decline and deterioration has been quite noticeable in many of the later planted orchards where the natural conditions were apparently good, and in many of these orchards the care has been better than was given the earlier planted orchards.

If these statements are true, what has brought about so radical a change? I do not think such a change should be laid to any one condition. It must be remembered that citrus orchards in the past thirty years have been planted on all kinds of lands, often where the conditions were very unfavorable, such as heavy soils underlaid with clay or hard pan and with poor drainage; soils underlaid with sand or poor gravel; soils that had been cropped and impoverished with wheat, corn, barley, etc.; soils that never had sufficient of the needed elements to sustain an orchard for a great length of time. Improper irrigation, such as holding water in basins, allowing the soil to bake under and about the trees; allowing the trees to suffer for moisture for a long time and then forcing them with water. Under such treatment I have known orchards where many trees soon develop gum disease.

Heredity a Factor.

All these are conditions unfavorable to the healthfulness of the orchard trees, but back of all this, may there not have been a hereditary weakness transmitted from the parent tree that has made a large per cent of the trees susceptible to such diseases as we find common in the orchards of today, and must we not look for some improvement from carefully selected seed?

Under the conditions I have named, we often find good, healthy trees yielding good crops of fruit, while the nearest trees growing under the same condition are weak, diseased, dead or dying. In such a case it would seem that some trees are weakly constituted and are more susceptible to disease than others. Now when we consider what kind of seed stock trees are grown from, is it any wonder why we have so much weakness and disease in many orchards?

Selecting the Seed.

In laying the foundation for a citrus orchard, we cannot lay too much stress on the importance of the careful selection of seed. I believe the seed should be one of the first considerations. If we save seed from fruit known to have grown on good old healthy seedling trees, we may reasonably expect much stronger, healthier, and long-lived citrus orchards as the result. It may be said that there is no certainty that the trees will all be like the parent trees because of the cross polenization from the weak trees. From my own observation I have found that this is only true to a very slight degree and that seedling orange trees produce after their kind almost invariably.

Let us compare the foundation we have used in the past twenty-five years with that known to have been used in the first orchards planted in California. I have not much data as to what kind of orange trees the seed plants were grown from, but I have good reason to believe that the seed did not come from the poorest fruit that grew, as has been the case in the later planted orchards of California; but rather from decayed oranges such as were found in the markets of San Francisco, which was probably the best fruit grown in the Hawaiian Islands, or the countries from which the fruit came.

Seed from Any Old Fruit.

I think that every one who has been connected with the growing of orange seed-bed plants will agree with me that all sweet orange seed grown in the past twenty-five or thirty years have been propagated from poorest seedlings, budded fruit, and a large portion from sick and weak trees. I think I can make myself better understood by explaining how orange seed is obtained.

In the past thirty or thirty-five years nearly all orange seed has been gotten from cull seedlings or any oranges that have seed in them, such as are thrown out at the packing houses for culls. A large per cent of these culls came from sick, diseased, weak and dwarfy trees. If there are any such in the orchards, the fruit almost invariably is picked from them and brought to the packing houses with the best. When the fruit is sorted, a very large portion of this fruit from the sick or diseased trees is thrown into the culls, consequently a large per cent of the seed comes from the very poorest and weakest trees in the orchards.

Now if this weakness is hereditary, and I believe it is to quite an extent, what may we expect if we go on planting trees from such stock? Who of you would knowingly plant the poorest seed of grain, potatoes, corn or anything except oranges? Why then should we not be just as particular, and more so, in selecting orange seed?

It has been said by many California growers that sour stock is immune from gum or foot rot disease. From my own observation I have found this not the case. I have seen a few cases where sour stock gummed quite badly. I have also had quite a bad case of foot rot in my seed bed nursery. In this case the condition was caused by heavy soil and too much water, and the root rot affected both sour and sweet stock the same.

In the past three or four years seed of the wild sour orange trees of Florida has become generally used by the nurserymen of California.

I understand the demand for this seed has been so great that all of this kind of fruit has been used for seed. Sour stock as a healthy long-lived stock to bud onto has been very highly recommended by Florida growers.

I believe this stock is much less subject to gum and root rot diseases than such sweet stock as we have been using, possibly because the seed has been saved from all of the fruit and not from all the poorest as has been the case with the sweet stock seed used.

I believe if all of our seed was saved from the best trees instead of the poorest, we would have a much larger per cent of good, healthy, long-lived trees. The picking out of good old healthy trees to save seed from applies to sour oranges as well as to sweet.

I am appreciative of the fact that the problem of decadence in orange tree production is is fraught with influences from many sources; the one I have written on being only one. In spite of that, however, I believe it important, and can only hope that others will follow up the lead.

Orange Groves of Pomona Valley as Seen From the Hills of Ganesha Park.

In Prof. Quayle's correction of an article on spraying for pests of the apricot, he did not take into account the fact that Mr. Essig wrote it with an idea to Ventura county conditions only, and the "Santa Clara Valley" mentioned was not the Santa Clara Valley of Santa Clara county, but the little valley in Ventura county along the Santa Clara river. It was a case merely of duplication of names which is quite common in our state and always confusing.

James Boyd of Riverside, has a peach tree which is 37 years old and which is bearing an exceedingly heavy crop this season.

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Charges for Soil Work

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Mechanical Analysis (five grades of fineness) $1.00
Lime and Magnesia Determinations (available) 1.00
All the above with Phosphoric Acid, Chlorine, Alkalinity, and approximate Humus................. .. .... 3.00
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SAMPLES—Take surface sample from first foot: subsoil from between 2½ and 3½ feet depth; deep subsoil from between 7 and 8 feet depth. One pound is enough for a sample if well mixed before dividing down. PRICES—These prices are in force only while advertised.

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Chemist and Soil Engineer
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Navel and Valencia.
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L. C. Rice, Tropico, Cal.
Phone Sunset Glendale. 263

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Decadence of the Navel

A Pomona Orange Packing House. Courtesy Pomona Board of Trade.

WISHING to please her guests at a feast, Juno, queen of heaven, told her attendants to bring of the products of the field. Of all the choicest, the golden apples brought by the goddess Pomona were the most acceptable. These Juno commanded to be planted and cared for by the Hesperides, but so attractive were they to both gods and men that the trees were constantly despoiled, and finally to protect the priceless fruit a hydra-headed monster was placed in the garden. When one of this creature's heads was cut off many others grew from the stump, so the apples of the Hesperides were most effectually guarded until Hercules by the aid of Atlas, overcame the hydra and carried off his golden spoil.

This myth was the preface to the address made by Prof. Elmore Chase at the citrus fruit growers' convention at Pomona last Tuesday and Wednesday, September 13 and 14, and aptly illustrated the situation confronting citrus growers. For a quarter of a century has been proved the ability of California soil and climate to produce apples of gold which have been turned into harder gold for the producers, but for the past few years those who have worked faithfully with the eariler planted orchards have found that some monster has taken possession of their groves so that they can no longer grow their fruit with the profit formerly secured. Some of them have said that these trees have reached an age where they can no longer bear profitably. Oranges in Florida and in Italy are known to live to an age covering scores or even hundreds of years. But California's experience has been almost exclusively with the Washington navel, so this age limit is as yet a conundrum,—though there are some of our closest observers who say that at fifteen or twenty-five years the profitable bearing age is passed and orchards must be taken out and replanted.

Decadence but not Death.

This was not the general opinion at the Pomona meeting, however. In fact, by a series of resolutions passed unanimously, the feeling was expressed that there are yet many years of use for these old trees providing we can solve the question of supplying proper conditions to renew their life. It was not the intention of calling the convention to solve this question immediately, rather it was realized to be too big to handle so quickly. The help which the citrus growers have received already from trained investigators encourages them to think that when this present problem is taken up intelligently a solution will be reached. Resolutions passed called for the appointment of a committee of seven orange growers to encourage investigations by securing the aid of the U. S. Department of Agriculture, the State Experiment Stations, and any other forces which might aid in determining a remedy. The committee is to be appointed by State Horticultural Commissioner Jeffrey with the aid of a committee of three named by the convention, A. F. Call, P. J. Dreher, and C. C. Teague. Thinking it might be desirable to include some of these three in this committee of seven, the convention ordered that the state commissioner should be at liberty to appoint them should he deem it wise.

A Hummer.

The convention was the largest gathering of fruit growers ever held in this state. As an indication we may say that at the opening session on Tuesday 610 people were in their seats, at a later meeting 725 were counted and it may be added that a brighter and brainier bunch never met to discuss questions of fruit culture. We believe one reason for this unusual attendance was the fact that one specific and vitally interesting topic was set before the growers. Heretofore a state fruit growers convention has been announced simply as "A Convention." Fruit growers were present not only from the seven citrus growing counties of the South; but Tulare also sent a good sized delegation to enter into the discussions as did Sacramento county.

Reasons for the Meeting.

Touching upon the meeting and the reasons for its call, Commissioner Jeffrey said:

"The objects of this meeting should be:

"First, to determine if there is serious deterioration of the citrus fruit trees or a marked decline in the productiveness of our older groves which have been given proper care.

"Second, if it is found that our orchard conditions are not what they should be, we should get all possible information before the convention relating to the causes of unfruitfulness and decadence, and from this information determine upon definite lines of scientific research for the future and designate its character and scope. Also by discovery to the best of our ablity of the causes and effects of decline, to afford some present relief to the growers whose trees are not doing well.

Experts' Aid Demanded.

"Third, having decided upon definite subjects of research, to take steps to secure scientific experts equipped for long and patient investigation.

"Fourth, from the results of this conference we should make broad and positive declarations upon the present status of the citrus industry, that shall set forth to the public a correct view of the business from all sides.

Excluding the esason of 1908-9, there has been no material increase of citrus fruits during the last ten years. The total output in ten years ending in 1908 was 248,206 carloads, an average of 24,820 carloads per year. In 1900-1 the crop was 25,000 carloads. The 30,000 mark has been reached but three times. By all rules of natural increase, the output should have reached perhaps 50,000 cars long before this. And it is a fact that low yield often means inferior quality and abnormal sizes of fruit.

"It is not foreign to the purpose of this meeting to state that our strongest claim to a protective tariff lies in our ability under protection to supply the markets of North America with cheaper and better citrus fruits than would be supplied by foreign growers should the California industry be crippled.

"No one must get the idea that the industry is in the slightest danger of collapse. New methods of marketing, the splendid productiveness of many of our old orchards and the planting of new orchards, in soils best adapted to citrus fruits and cared for in the light of our long experience, insure the future of the industry. But some of the best orchards in the state are becoming unproductive, suffering from decadence or at least stagnation. Experts are complaining that they do not know how to meet these adverse conditions of later cultivation."

There were a few of the ever ready who advanced solutions of the problem; some of these may be seen in all their contradictions on the cover page of this issue, and even this list does not give them all.

Some Features.

Mr. Wood's address, quoted on the preceding page, shows how one of the questions discussed was handled. Many of his hearers thought his suggestion of the proper selection of seed and buds the more important answer to the question. Other addresses touched upon soil conditions, upon pruning in its varied phases, etc. Mr. Chas. R. Paine of Crafton, spoke as he has before on the importance of admitting light and air to all parts of the tree. His address will be given almost in full in a later Cultivator. Dr. J. Eliot Coit discussed the relation of bud variation, or, more properly, bud mutation, to decadence. Full report of this will appear in the columns of The Rural Californian for October.

The only failure of the program, and one which was much regretted, was in not being able to hear from Mr. P. J. O'Gara, formerly pathologist in connection with the Department at Washington, but more recently employed by the fruit growers of Hood River, Oregon. Prof. O'Gara was to discuss frost and its effects on the permanent health of citrus trees, but his recent change from the Department to a position with the apple growers of the North necessitated giving up his trip to California.

Generally the impression prevailed that we must look to the soil and its conditions, both mechanical and chemical, for the solution of the problem. This subject was discussed by Prof. Elmore Chase of Fairoaks, and his address will be given later. Prof. Ballard of the Bureau of Plant Industry, Dr. Snowden, Soil Engineer, of Los Angeles, and Mr. Macoun, assistant superintendent of the Arlington Heights Orchards at Riverside, were also among the prominent speakers. Mr. Macoun's belief is that aeration through deep culture, and the working of humus into the soil to prevent formation of plowsole or hardpan are the principal remedies of the condition discussed.

No Royal Road.

An excellent spirit prevailed and every address was of great value. The one who went with his question as to how his deteriorating orange tree may be renewed, possibly went home disappointed. There was no royal road outlined, through many hints were given which with common sense application will be of great value.

Generally the convention looked at the larger aspects of the industry and set in motion that which will accomplish results.—C. B. M.

CONVENTION NOTES.

Pomona proved herself a most entertaining hostess. The convention lasted only two days, which did not allow of any extended social functions, but early on Wednesday auto-

Continued on page 287.

Frost --- Methods of Protection

The time for **Decision** and **action** has arrived. What is the grower of citrus fruits in Southern California going to do to protect his orchard the coming season against frost?

He must either equip to protect, or take chances. The lesson of last year to those who took chances was an expensive one, excepting, of course, those who escaped.

With those who have decided to protect, it is simply a question of method, which includes the questions, also, of efficiency and cost.

Three materials, only, for the purpose are available in Southern California, namely, **coal, oil** and **smudge fuel.** By "smudge fuel" we mean shavings and fruit pits saturated with petroleum, to be burned in a self-ventilating stove.

Coal is effective for the purpose, and unobjectionable, but very expensive. To burn coal means one hundred coal baskets to the acre (assuming 100 trees to the acre), one hundred bundles of kindling, one hundred careful fillings of baskets, coal at $10.00 per ton, or more, and an army of men to start the fires and keep them going. This is the most expensive method of protection.

Oil is less expensive than coal, but much less effective. It will produce smoke, but not enough heat. It is also objectionable in that it smuts the fruit. Smoke alone will never provide protection against frost. It has been tried for years and always without success. It is useful only when a saving degree of heat is generated, but heat is the saving agent.

Smudge Fuel is at once the cheapest and most effective of the three materials named. When made of light oil, fruit pits and shavings it gives great heat, all the smoke required, and does not smut the fruit.

A gallon of oil, when burned alone, will protect one tree four hours, and no longer. That same gallon of oil, with pits and shavings added, will make smudge fuel enough to protect four trees for from five to six hours, and generate more heat than the oil alone. These statements are based upon actual competitive tests.

In addition to the question of method of protection, the grower must make up his mind to **be ready** when frost arrives. In this connection procrastination, and a disposition to gamble on chances, are the manifest faults of too many growers. "Fire up or freeze" is the lesson of last year in a nutshell.

We cannot make deliveries of fuel and stoves in time to afford protection if orchardists, as many have done heretofore, wait till the eleventh hour. If orders are received now, or soon, we can deliver the goods in ample time—payable, of course, after delivery. Write for order blank and any further information that may be desired.

Prices: Smudge Fuel (sacked), $10.00 per ton in car lots (minimum car 15 tons); Stoves 45 cents each, both F. O. B., Los Angeles.

OCCIDENTAL FUEL COMPANY,
201 Douglas Building,
Los Angeles,
Phone: A5125. California.

The Sacramento Valley Development Association is making a campaign to secure the 1911 convention of the National Irrigation Congress for San Francisco.

Costello Power Sprayer

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It is self-contained and built by practical experience to meet the demands of the fruit growers. Write for particulars.

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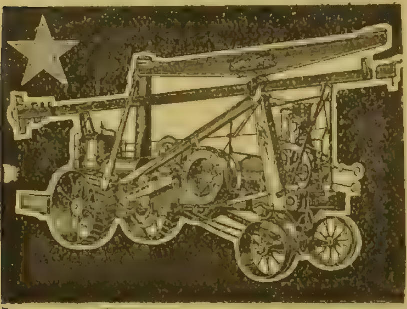

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At Haywards, Cal., Mid-Summer Show, we won **every prize** but 2nd Cockerel. **Gold special, special** for **best display,** etc. Eggs for hatching. Stock for sale. Write for prices, and **book now** for eggs for Fall Hatching.

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Deciduous Fruit Culture

APPLE AWARDS AT WATSONVILLE.

OFFICIAL advices received by The Cultivator give every assurance of a great exhibit of apples at Watsonville, October 10 to 15, and also a wide and keen interest in the event among all classes of fruit growers. For it should be remembered that the coming event is not merely local in character, but has been arranged for on sufficiently broad lines to give it state importance. This is strongly indicated in the premiums that are being offered, which include awards on whole carloads, with many for exhibits of smaller dimensions. The following are the more salient features in the way of premiums, honors, specials, etc.:

Class 1, Carload Lots—Best carload each variety, gold medal; second, silver medal.

Best car mixed varieties, gold medal; second, silver medal.

Best carload at the show, special sweepstakes, gold medal.

Class 2, 100-box exhibits—Best 100 boxes, single variety, gold medal; second, silver medal.

Best 100 boxes mixed varieties, gold medal; second, silver medal.

Class 3, 10-box exhibits—Best ten boxes each single variety, gold medal; second, silver medal.

Best ten boxes, mixed varieties, gold medal; second, silver medal.

Class 4, 5-box exhibits—Best five box each single variety, gold medal; second, silver medal.

Best five boxes mixed varieties, gold medal; second, silver medal.

Class, 5 single box exhibits—Best box, each single variety, gold medal; second, silver medal.

Best single box, one variety, exhibited, sweepstakes, gold medal.

Class 6, plate exhibits—Premiums in this class blue ribbon first, red ribbon, second, sweepstakes prize a cup.

Class 7, evaporated apples—First, gold medal; second, silver medal.

Class 8, factory products—First, gold medal; second, silver medal.

Class 9, canned apples—Same premiums.

Class 10, cold storage apples—Best display grown in 1909, gold medal; second, silver medal.

Futurity prize, best exhibit of apples grown in 1910, to be exhibited again in 1911, special gold medal.

Class 11—Domestic by-products—First, blue ribbon; second, red.

Class 12, appliances and auxiliaries—No premiums.

Class 13, largest apple—Cup, suitably engraved.

Class 14, feature exhibits—First, $100; 2nd, $75; 3rd, $50; 4th, $25; 5th, $15; 6th, $10.

Other prizes have been offered by outside parties and it is expected many more will be offered.

It is also hoped that a substantial sweepstakes prize will be offered for the sweepstakes car. If it is possible to induce the parties before whom the proposition has been placed to offer a cash prize of $500 or more, the committee recommends it be made a condition that this car be taken to Chicago and exhibited before the Irrigation Congress which meets in November.

Tulare County Fair is declared off for this year.

SOIL CONVENTION.

On Monday morning, October 3, one of the most important conventions which will have to do with agriculture will begin its sessions in the Chamber of Commerce building, Los Angeles. Two noted speakers, Dr. F. H. King of Wisconsin and Dr. Cyril G. Hopkins of Illinois, will give addresses twice daily from Monday morning till Friday afternoon. Representative Californians will preside each day.

On Monday Dean Wickson will preside and deliver the opening address. Dr. Hopkins will lecture in the morning on "Soil Fertility in Relation to State and National Prosperity."

In the afternoon Dr. King will lecture on "Physical Features of Soils which Influence their Ability to Feed Crops," and Prof. J. H. Norton of Riverside will speak of the "Management of Citrus Orchard Soils During Autumn and Winter."

Tuesday, Oct. 4—Prof. A. J. Cook presiding. Morning:

"Factors in Crop Production," Dr. Cyril G. Hopkins.

"The Soil as a Culture Medium; the Relation of Temperature, Moisture and Air, as well as Plant Food, to Bacterial Development," Dr. C. B. Lipman.

Afternoon:

"Development and Maintenance of Good Physical Soil Conditions," Dr. F. H. King.

"The Management of Citrus Orchard Soils during Spring and Summer," Professor J. H. Norton.

Wednesday Oct. 5.—Mr. C. C. presiding.

Morning:

"Established Principles Relating to Soil Improvement," Dr. Cyril G. Hopkins.

"The Relation of Soil Bacteria to the Nitrogen Question; Ammonification, Nitrification, Denitrification," Dr. C. B. Lipman.

Afternoon:

"Functions and Duty of Water in Crop Production," Dr. F. H. King.

"Soil Management of Citrus Orchards during Spring and Summer" (Continued from previous day), Professor J. H. Norton.

Thursday, Oct. 6.—State Commissioner of Horticulture, J. W. Jeffrey, presiding. Morning:

"The Application of Science to Local Soil Conditions, Dr. Cyril G. Hopkins.

"The Relation of Soil Bacteria to the Nitrogen Question; Nitrogen Fixation; Symbiotic and Non-Symbiotic," Dr. C. B. Lipman.

Afternoon:

"Conservation and Application of Water in Crop Production," Dr. F. H. King.

"The Soil Work of the Citrus Experiment Station at Riverside," Professor J. H. Norton.

Friday, Oct. 7.—Dean Wickson presiding. Morning:

"What kind of Soil Work the State Experiment Station should Undertake," General Discussion led by Dr. Hopkins.

Reports of Committees, etc.

Afternoon:

"Soil Bacteria in Relation to other Plant Foods in the Soil; Relation of Manures and Fertilizers to Soil Bacteria," Dr. C. B. Lipman.

General Discussion.

PRUNING THE APRICOT.

Touching upon apricot pruning in California Fruits, Mr. J. B. Neff, of Anaheim writes:

"Pruning the apricot requires some skill and considerable judgment; which can only be formed by experience and observation of the habits of the tree. Trees of four to five feet in height are preferable for planting, and when planted should be trimmed to a single stem and cut off at eighteen inches from the ground. These will throw out shoots vigorously and frequently two or three shoots from one bud. These shoots should be thinned out, leaving not more than four or five, no two of which should come from one bud, nor be directly opposite. The first shoot

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should start twelve inches from the ground, the others in such a manner as to divide the space and make the branches balance, leaving the top shoot to form the central part of the tree.

"It will be necessary to go over the trees several times the first year to remove shoots that may start where not wanted, but no general heading back should be done, as it tends to dwarf the tree; though if some of the limbs are making an overgrowth they should be pinched back to keep the head balanced.

"The pruning of the second year should be done in January, as the tree will not be dormant until then, if it has been kept in a thrifty condition. The first year's growth should be cut back to within five to ten inches of the body of the tree, and all forks should be cut out, even if it necessitates forming a new head, as it is much better to lose some growth on a young tree than to run the risk of splitting down when the tree begins to bear fruit.

"When the shoots start for the second year's growth, take off all that come on the under side of the limbs and thin to one, two, or three, as may be needed to balance the tree, bearing in mind that an apricot tree inclines toward the coast breezes in this locality.

"The second year will require much more attention than the first year, in order to keep off suckers and all lateral growth that may start on the under side of the new limbs, the obejct being to make the limbs grow as nearly upright as possible. The remark on heading back holds good for the second year also.

"The trees will become dormant earlier the second year than they did the first, but should not be trimmed earlier than December, and a month later is preferable, as the ends of the drying limbs are not exposed to the drying winds so long before the sap begins to flow and consequently will heal over better. The second year's growth should now be cut back to within fifteen to twenty inches of the old wood, except the central stem, which may be left twenty-four to thirty inches long, depending upon the number of laterals it may have thrown out. When the new shoots start they should again be thinned down to two or three inches on each limb, and all taken off that tend to turn down or out at right angles, but do not take off the fruit spurs.

"The trees will need to be gone over about three times before July to remove suckers and lateral growth that may start on the lower side of the limbs, as the tendency in the third year is to make an immense growth of downward laterals, and these must be taken off so as to develop wood that is to be left for fruit. If the orchard is on good land and has been properly irrigated and cultivated, the trees should now be large enough to begin to yield fruit. The object in trimming during the first two years and the first half of the third year has been to grow a vigorous upright tree, with strong limbs, capable of carrying a heavy load of large fruit, and to get the fruit as close to the body of the tree as possible.

"There will be a few specimens of the fruit the third year, and as soon as these are gathered the trees should be summer pruned for the first time, care having been taken that the land shall have been allowed to become moderately dry so that the trees may be partially dormant. If the downward growth of the laterals has been cut off, all that remains to be done is to cut off about one-half of all this season's growth all over the tree, using the same judgment as before with reference to prevailing winds and symmetry of tree. If this is properly done and water at once turned on the orchard, a new growth will be made and the fruit buds for the next year fully developed.

"The only pruning necessary in the following winter will be to take out any cross limbs and sprouts that may have been overlooked in the summer.

"After the trees begin to produce regular crops they will not grow so vigorously, and the numerous prunings of the first three years will not be necessary, as almost all can be done by summer pruning until the trees get so old that they need the old wood taken out. This can be more readily done without damage to the trees where from 24 to 30 limbs are grown, than in the old method of leaving only eight to ten large limbs.

"When it becomes necessary to take out old wood—as the best fruit grows on new wood—a few limbs can be taken out each year until a full top of new wood is again made.

Thirteen cars of Gravenstein apples were shipped from Sabastopol one day last month.

FALL CLIPPING INCREASING.

In most sections of the country the practice of clipping horses in the fall months is growing rapidly.

Perhaps one reason for this increase in clipping, since owners recognize its advantages, is the fact that it can be done very quickly and with little exertion through the use of the modern clipping machine. One large manufacturer makes a machine that is generally regarded as the best, is superior to anything else on the market and as this outfit complete, lists at only $8.50, it is no hardship for any owner to have one in his stable.

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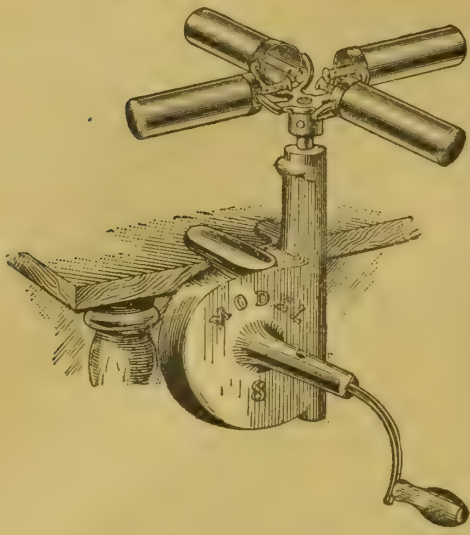

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No. 4. 4 bottle for milk, and cream	14 each	5.50
No. 4 4 bottle for milk, and cream	15 each	7.00

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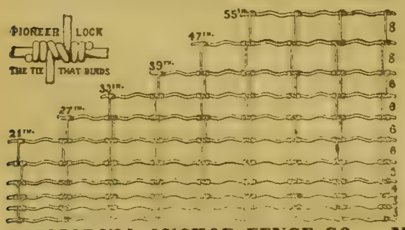

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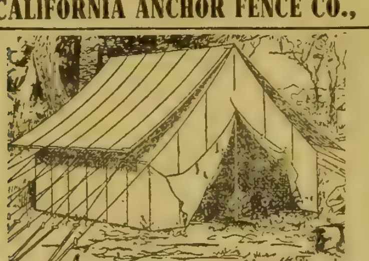

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Dairymen and stockmen are requested to write of their experience. Mrs. Sherman is always willing to answer queries and this, with experience of other workers, will make this department of greater value.

THE ORPHANS.

By Mrs. M. E. Sherman.

ON a farm it sometimes happens that the dam dies and leaves a baby colt of calf to be raised by hand. Raising a colt or calf is easily done if the dam lives long enough to start the little one to eating. The colostrum, or first milk of the dam is intended by its cleansing purgative properties to start the action of the gastric juices, as well as to cleanse the stomach and bowels of their tar-like substances. When this colostrum is lacking the young animal begins life at a disadvantage and must be helped by medicines in many cases. When the animal is twelve hours old, if no natural action has taken place from the bowels, then give a teaspoonful of castor oil mixed with a tablespoonful of olive oil in a teacup of warm water. Follow this up **at once**, with an enema of half a pint of warm water containing a teaspoonful of glycerine. After the bowels are acting freely begin to feed milk.

The Colt.

Cow's milk is richer in butter fat and poorer in sugar than mare's milk. It is necessary to modify it for feeding a colt. A pint of warm milk has one-quarter more hot water added and a heaping teaspoonful of cane sugar. A shallow pan is the best for feeding. When a pail is used the colt will draw some up his nose and that terrifies him beyond all reason; I have known colts that never seemed to recover from this terror. A colt is more timid than a calf and more liable to nervous shock. During the first four weeks a colt should be fed every four hours, if possible, though many omit the feeding in the middle of the night. After he is a month old, three times a day will carry him along nicely. Now begin to add a little bran to the milk, a mere pinch at first, and increase it so that by the end of the month he is receiving a teacupful three times a day. Then begin to add rolled barley so that at five months old he is getting half a teacupful with a teacupful of bran. Then begin to give him water in the milk until he has only the moistened meal.

Cream Separators, all sizes and prices. O. J. Weber Co., 225-227-229-231 East Sixth street, Los Angeles.

Pets.

These orphan colts become great pets, and also great pests, around the barn. We find it best to put them with the cows on this account and they come in and out with them after they are two months old. When left around the horse barn they have a way of nipping the older horses that often results in their getting kicked, and then too, they get into the stalls with some good natured animal and gorge themselves on the rolled barley until it sometimes proves fatal. These pet colts are very hard to break and have little regard to the wishes of trainers. They often prove hard to confine, as they become wise on the fastenings of gates and doors. As soon as the little fellow has learned to eat hay and to graze freely he is better off to be turned out with the other horses,. The grave old mares certainly give the youngster good council and he forgets his human friends rapidly and becomes shy with them. He is easier handled later on if not too familiar with the human race.

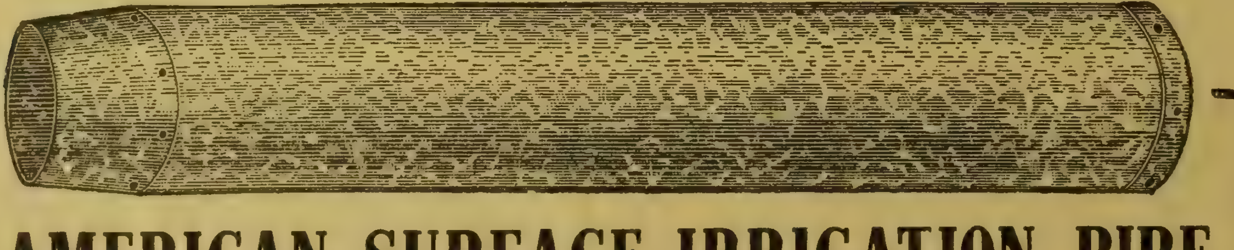
Orphan Calves.

While the same treatment would be equally good for the calves we feel that they rarely get as much care as the colts. Sentiment probably has to do with it, for on a ranch the men will feed the horses and let the cows starve. When there is a scarcity of milk the calves may be raised with very little hay by the use of hay tea. Gather the leaves that have fallen from the alfalfa hay into the bottom of the mow. Put into a gallon of water a quart of the loose leaves and let them come to a good boil, then cover the boiler and place on one side where it will steep for half an hour. Pour off the liquid portion which should have the color of black tea. This substitute for milk is added gradually to the skim milk after the first three days. When the calf is a month old add gradually to the tea a little cooked bran or oil meal gruel. This must be well cooked and stirred into the hay tea. At first a good teaspoonful is enough; then this can be increased to a teacupful at each meal. Hay tea is one of the culture mediums for bacilli and must be fresh or it will play the mischief with the calves.

Hay Tea.

It is not always convenient to make this every day, so it may be made in larger quantities and canned for use. Twelve two-quart Mason jars are filled with the tea while it is boiling hot and screwed up carefully. At feeding time in the morning two jars can be heated and one fed while the other is packed into a hay lined box down at the barn for the evening feeding. The jars are heated by putting them into a boiler of hot water and are not opened until ready to use. When the calves are six weeks old, they may be coaxed to eat a portion of their food dry. A small low feeding trough is supplied with a mixture of one quart of rolled oats, one quart of corn meal, four ounces of oil meal, one tablespoonful of blood meal, one tablespoonful of salt, two tablespoon-

Do your cows milk hard? Send 50 cents for teat expander. O. J. Weber Co., 225-227-229-231 East Sixth St., Los Angeles.



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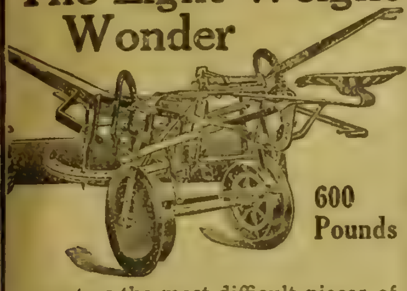

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The Cutter Laboratory
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fuls of baking soda, and one of ground anise seed. This makes a good growing feed for the calves, and the hay tea may be dropped if there is any pasture for them to nibble at the same time.

Richer Ration.

Sometimes this ration is a little too narrow for calves that are desired for show animals; it may be modified as follows. (We think this is better for winter feeding at all times). One quart of bran, one quart of cornmeal, one quart of barley meal, one tablespoonful of blood meal, one of salt and two of baking soda. Add the anise if there is any lack of appetite in the band of calves.

The barley meal is secured at the horse barn by shaking it on a sieve and taking the fine portion for the calves, leaving the coarser parts for the horses to eat.

LARGE BLACK HOGS.

By G. E. Morton, Colorado Agricultural College.

The Large Black Hog, an English bacon breed, is little known in this country. There are only four herds, so far as is known, in the United States. They are a long, deep bodied, narrow hog, with enormous drooping ears. They are not prepossessing in appearance, but their great fecundity recommends them to corn belt farmers. A sow shipped recently by the Colorado Agricultural College to Mr. J. H. Decker, of Calloway, Neb., farrowed fifteen strong pigs soon after arriving. The pigs are strong and active even though farrowed in the coldest weather. Litters of the Large Black breed have pulled through when both Poland China and Tamworth pigs died as the result of the thermometer dropping to eighteen below.

As a bacon breed the Large Black has a distinctive advantage in an unusually light shoulder. The carcass is rather limp and unprepossessing in appearance, but the bacon cooks as crisp as any. The bacon is rather a surprise upon the table, after one has seen the carcass, The meat of the carcass is rather colorless.

A Large Black carcass was entered in the carcass contest at the January, 1910, Western Live Stock Show, in Denver, and elicited rather unfavorable comment from the judge, who was a prominent retail butcher of Denver. Too much stress should not be laid upon this, however, as our western markets are notoriously lard markets.

A cross of Large Black and Poland China proved fairly satisfactory. I believe the Large Black should prove useful by infusing new prolificacy into herds of grade Poland Chinas or Berkshires that have run out through excessive corn feeding.

DISTEMPER IN HORSES.

Distemper, or strangles, is a disease principally affecting young horses. It is due to a germ belonging to the streptococcic group. The disease is accompanied by high fever, catarrhal inflammation of the mucous membranes, especially of the nasal passages, and as a result of this condition, a discharge from the nose. There is a swelling of the lymph glands under the jaw, which later results in abscess formation.

A horse with distemper can communicate it to a healthy one.

The germs are found in the discharge from the nostrils and in the pus from the abscess which forms under the jaw and later breaks.

The majority of cases of distemper occurs before the age of five years.

The constitutional disturbances caused by the shedding of the teeth, and cutting same, as well as impure air in poorly ventilated stables, overworked and poorly fed animals, are factors that weaken the resistance and make infection possible to produce the disease.

The disease is more common in the spring and fall of the year, particularly the former, on account of the chill received as a result of the sudden changes at these seasons of the year.

The disease can also be transmitted from dam to offspring through the milk.

The animal usually develops the disease in from three days to three weeks after being exposed to the contagion.

Animals affected with distemper should not be sold. Young animals should not be brought in contact with those affected nor watered out of the same bucket, nor come in contact with any other property until it has been thoroughly disinfected. An animal should not be castrated while suffering with strangles.

A vaccine made from the specific germ causing this disease is very useful in combating distemper, both as a preventive and as a cure, and promises to be of as great value as the antisuppuration vaccine made from the germs which causes poll evil, fistula and wound infections.

Like the antisuppuration vaccine, to get the best results it must be used by one who is trained in the diseases of the lower animals and understands the use of vaccines on same. It is therefore advisable to have it used by a competent graduate veterinarian. —B. F. Kaupp, Colorado Agricultural College.

DID YOU READ IT?

In Hoard's Dairyman, in the report of the meeting of the Maryland Dairyman's Association, Mr. C. B. Lane said this:

"There are three classes of cows: —those that eat food and produce beef from it; those that eat food from which they produce milk; and those that eat food and the Lord knows what they do with it. We must have better cows."

Now the question is, in which class do your cows belong?

"The truth is, no one man can say he had more to do with the formation of the Poland-China breed than another. It was the result of the labors of many. It grew out of the introduction of the China hogs by the Shakers of Union Village, Ohio, their crossing with the Russian and Byfield, and the subsequent crossing with the Berkshires and with the Irish Graziers. After 1841 or 1842, these breeds ceased to exist in either Butler or Warren counties and have had nothing whatever to do with the Poland-China breed for the last 34 years." Controversies as to the precise crosses and by whom and under what particular circumstances they were made, prior to the middle of the last century, to form the breed, may interest a few; but what is vastly more important to the practical swine breeder is the fact that there was produced a race of swine now bearing the name of Poland-China that has been able to hold its own for three-fifths of a century as the most popular and most widely distributed pork-making machine in the foremost pork-producing region of the world.—From Coburn's "Swine in America."

Sugar Beet Pulp takes place of green grass as a milk producer. 40c per ton. Los Angeles Sugar Factory.

Anthrax Cure, Milk Fever Outfits. See O. J. Weber Co., 225-227-229-231 East Sixth street, Los Angeles.

Sound Separator Logic

So many claims are made by competing separator manufacturers that it may seem difficult to decide which machine will give you the best service.

Here is just one fact that it will pay you to keep in mind:

De Laval Cream Separators

are used exclusively by 98% of the world's creameries.

There can be no better recommendation for the DE LAVAL than the fact that the men who make the separation of milk a business use the DE LAVAL to the practical exclusion of all other separators.

The more you come to know about cream separators the better you will understand the superiority of the DE LAVAL.

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The Ornamental Garden

ALKALI RESISTANT ORNAMENTALS.

SOME of the richest land in California is tinged with alkali, sometimes to the destruction of all vegetable life, sometimes to only a limited extent which prevents some trees from growing. Those having homes or grounds located on such soils, and wishing to give as much beauty to them as possible, are perplexed as to what plants will succeed in alkaline soil. Mr. O. M. Morris of the Morris & Snow Seed Company of Los Angeles, has furnished to us the following list of shrubs and trees which take kindly to such locations. We hope this will be of value to many Cultivator subscribers.

Acacias.

The acacia family is one of the largest in the vegetable kingdom. Bailey's Cyclopedia catalogues 53 varieties and gives a supplementary list of dozens more. They grow of all sizes from small shrubs to large forest trees. Many are gorgeous in flowering. Desirable varieties which will stand alkali are:

Armata or Kangaroo Thorn, a shrub which grows from six to eight feet, said to be an excellent hedge shrub with magnificent spring bloom, and as with other acacias, of course, yellow.

Latifolia, growing to the height of 25 feet or more. It is one of the most popular trees in Golden Gate Park, San Francisco. There it has been planted in the sun where the wind is very strong, and does exceptionally well, even down the slopes of the hills and to the edge of salt water.

Pycnanthea, a 20-foot tree.

Seligna, growing from six to 20 feet. It has bright yellow flowers.

Casuarina.

Sometimes called beefwood or she oak, another Australian tree and one of remarkable beauty. Bailey's Cyclopedia says: "It will grow well in brackish and alkaline soil and is especially valuable for holding seashore sands from drifting. It is propagated by seeds and cuttings. It takes its name 'beefwood' from the bright red, beefy appearance of the wood when cut. The branches are long and slender; wood very hard and brittle. The name 'casuarina' is from casuarius (cassowary) given to it because of the resemblance of the branches to feathers. The tree has been known in Australia to grow as high as 150 feet, but 50 to 80 feet is nearer its growth in this state."

Pittosporums.

Pittosporum comes from the Greek meaning pitch seed, because of the resinous coating over the seed. There are 100 species, most of them hardy, evergreen shrubs, though some grow to be 50 feet high. One Pittosporum undulatum (Victorian box) in Singleton Court, Los Angeles, is 28 years old and something over 25 feet in height. The branches are as broad spreading as the tree is high.

Melaleuca.

There are more than one hundred species to be found in this family. Like the casuarina, it is valuable as a sand binder. The tree will thrive in very salty ground and water. It is said to be a corrector of fever conditions. The wood is close-grained, hard and durable. Trees grow from four to 50 feet in height.

Eucalyptus.

The swamp mahogany and a number of others of the eucalyptus family will stand alkaline conditions.

Salt Bushes (Atriplex.)

Several varieties will stand alkaline conditions. They grow from three to ten feet high.

Cassia.

One of the leguminous families in which there are several hundred herbs, shrubs and trees. The cassia tree grows about ten feet high.

Monterey Cypress (Cupressus Macrocarpa.)

This is a native of the state, growing from 50 to 70 feet in height, often used for hedges and kept suppressed, but under these conditions is not proving to be long lived, and its use as a hedge plant has been largely discontinued.

Monterey Pine.

This is a very beautiful tree and grows to a height of 70 feet.

Cocas palm.

One of the very handsomest palms grown in California, the plumosa being especially fine. Rather slow growing, but well worth waiting for. It reaches a height of 30 to 40 feet.

Washingtonia Palm.

The most common of the fan palms are the Washingtonia filifera and robusta. Mr. Morris speaks of these as attaining a height of 30 to 50 feet, but we are sure we have seen robustas much higher.

Tamarix.

A very ornamental deciduous tree of pyramidal habit, growing to a height of 20 feet or more. Two varieties are especially good, Gallica and Africana. This tree will also stand coast influences and quite salty lands.

Fabiana.

A shrub from South America, dwarf in habit, though some varieties grow to 20 feet in height. It will not stand low temperatures. Produces pure white tube-shaped flowers in great profusion, and when in bloom is a most beautiful shrub.

Veronica.

The Veronica is a shrub growing some four or five feet in height. Imperialis and Traversii are the varieties more largely grown though there are dozens in the family.

Caesalpina.

There are 50 members of this family, ranging from shrubs to the taller trees. Valuable for tanning material and dye-stuffs. Has very showy flowers. One of the best varieties for alkaline situations is coriaria.

Algaroba, St. John's Bread.

The Algaroba grows to a height of 130 feet.

Arundo Donax.

This is a perennial grass which resembles bamboo. It grows as high as 15 feet. It is found all along the streams and even dry washes in California. It is sometimes called the giant reed.

Vetch

(Vicia Sativa)

The most valuable plant for cover crops now being used in California. Should be sown in September or October, if possible, and plowed under early in the spring. Also very valuable as hay and when so used should be sown with oats or barley to hold up the vetch.

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Vetch

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Shrubs growing 6 to 10 feet.

Albizzia.

A leguminous tree 30 feet in height. Generally classed with acacias. Ornamental with graceful foliage, yellowish flowers in summer. Culture same as that of the acacias.

Leptospermum.

Leptospermum is from the Greek meaning slender seed. It belongs to the myrtle family, and is an Australian tree also. Dr. Franceschi reports that this tree stands drouth well in California. It will grow from cuttings. It is covered with a mass of white flowers. A tree which will stand much hard usage. Grows to 20 feet. Bailey says "it deserves greater popularity." This and probably the Pittosporums are the finest ornamentals yet introduced from Australia and are very hardy.

Myoporum.

A shrub growing ten feet high. The name comes from Greek words referring to the translucent resinous dots on the leaves. The different members of this family have been brought from Australia and New Zealand. It is recommended for near sea coast and will stand salty conditions. In Paris one gardener grows 30,000 of these plants every year, potting and selling when in flower. Flowers are snow white and borne in great profusion. Berries are also ornamental.

Callistemon, Bottle Brush.

The name of this evergreen shrub comes from kallos (beauty) and stemon (stamens). The stamens are mostly of a beautiful scarlet. Seedpods are regular and button-like, very close to the stem, and remain closed imprisoning seed until broken from the tree. Will also grow from ripened cuttings, and reaches a height of four to 20 feet.

* * *

The Arizona Agricultural Experiment Station recommends for that section the following alkali enduring shrubs:

Salt Bushes:

Lycium Gracilipes and L. Fremontii, squaw bushes. Fleshy-leaved plants, desirable as winter and spring ornamentals, being very conspicuous at these seasons by reason of their wealth of bright green leaves and many small bell-shaped flowers, which are soon followed with red berries. In the summer season these plants are entirely leafless, and need no attention as concerns watering or other care. Under native conditions the former species, in particular, inhabits rather alkaline areas, though it appears to grow as well with a little care in the ordinary mesa and valley soils.

Atriplex Lentiformis.

This is another of our native salt bushes which invariably frequents alkaline situations, likewise becomes attractive with cultivation. This plant has silvery-gray foliage throughout the year, the appearance of which is heightened in the fall with masses of golden-yellow and silvery-white flowers. It is a robust growing species, ordinarily attaining heights of twelve to fifteen feet, though it endures heavy annual cutting back.

Atriplex Numularia.

A round leaved salt bush, and is a native of Australia and similar to the above. It grows about six feet high and has an abundance of deep green, rather fleshy leaves, being more compact in habit of growth than the former species.

Tamarix.

The various species of tamarisks also flourish in soils more or less alkaline.

THE DAHLIA AND ITS CULTURE.

There are three methods of propagation of the dahlia—from seeds, from cuttings, from tubers started under glass, and by divisions of old clumps.

Seedling plants are unsatisfactory, as there is only a small proportion of good ones for the effort expended.

Green-grown plants give in most cases the best results for cut flowers in a number of ways.

My preference is for divisions of old tubers cut as small as possible, planted about May 15th. When about four inches high, top them. If they are in good, rich soil and conditions are very good, I would top these a second time as soon as they make growth enough to do so, and give good culture; but they should be planted deeply and, as they progress, should be cultivated so that the soil makes quite a ridge.

The culture should be with a view also of firming the soil as much as possible for the best results, as the radiation of moisture from loose soil is trying to dahlias striving for best results.

The whole idea in growing dahlias is to have them make a constant, rapid growth.

When green plants are wanted they should be started into growth at any time after Christmas, and cuttings taken as soon as large enough to do so. These should be potted up as soon as ready out of the sand beds into poor soil, as rich soil induces a soft growth. The poor soil makes a better plant and more vigorous, and less liable to damage while under glass.

We top them when planting about June 1st and give a second topping as soon as possible; thus the plants remain shorter, and the yield is greater. But in any event we allow but one stem to grow. The dahlia is a gross feeder and should have plenty of water.

If these plants are given the attention as above there is no reason why any one should not have an abundance of blooms.

The following are very good early, free-blooming sorts:

For show—A. D. Livonia, pink; Arabella, yellow, suffused rose at tips; White Swan, fine white; Hector, rich brick-red; Frank Smith, maroon, mottled white; Amos Perry, rich scarlet; Countess of Lonsdale, salmon-red; Floradora, rich maroon crimson; J. H. Jackson, very dark maroon; Standard-Bearer, fine red; Winsome, best white; William Castle, rich yellow.

For DecorationC. W. Burton, rich yellow; Black Beauty, maroon black; E. L. Bassett, rich purple; Jack Rose, rich "Jack Rose" red; Orange King, orange red; Sylvia, fine pink; Wm. Agnew, rich scarlet.—Farm World.

Shortage of water is compelling many alfalfa growers at Tipton, Tulare county, to install motors.

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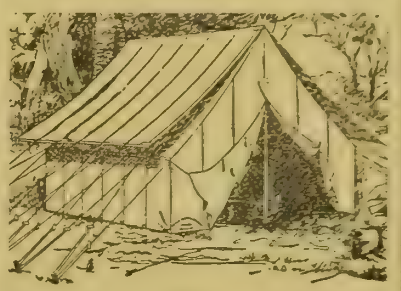

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A Journal of Horticulture and Agriculture

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Soil Convention.

The greatest problem confronting the soil tiller has to do with the physical and chemical condition of the soil. These questions are not simplified for the California tiller; in fact, it has been asserted that the question is more complicated here than in the East.

The University of California is conducting a series of experiments which it is hoped will lead to material results. It has now taken a different step, securing two of the greatest authorities on soils which this country has produced. These scientists are to come to California, make a critical examination of soil conditions, and later deliver a series of addresses on what they have found, and we doubt not will tell us what to do to better conditions. Dr. Cyril G. Hopkins, Professor of Agronomy in the University of Illinois, Chief in Agronomy and Chemistry, Vice-Director of the Illinois Agricultural Experiment Station and author of "Soil Fertility and Permanent Agriculture," is one of these. The other is Dr. F. H. King, formerly Professor of Agricultural Physics in the University of Wisconsin and author of "The Soil," one of the most quoted of books on soil fertility. Dr. King will lecture on soil chemistry, rational fertilization, plant foods and irrigation, soil water, soil physics, and tillage.

This course of lectures will be delivered in the Chamber of Commerce building, Los Angeles, October 3-7, a solid week of exceptional educational advantage to every soil tiller.

In addition, Prof. Norton of the Experiment Station at Riverside will give a description of his work at the Citrus Experiment Station, and Dr. Lipman will lecture on soil bacteriology.

Arrangements have been made with the railroads to give reduced rates.

Prof. J. H. Norton informs us of the schedule which will be followed by Drs. King and Hopkins on their arrival in California: Sept. 25, Limoneira Orchards, Santa Paula, Ventura county; Sept. 26, afternoon, looking about Riverside, with banquet at Glenwood in the evening; Sept. 27, detail investigations of Arlington Heights orchards at Riverside; Sept. 28, making the loop through San Bernardino, Redlands, Crafton, Mentone, and Patton, and back to Riverside at night; Sept. 29, Rialto, Etiwanda, Cucamonga, Ontario, staying over night at Pomona; Sept. 30, investigating foothill section between Pomona and Pasadena, spending the night at Pasadena; October 1, Fullerton, Anaheim, Orange, Santa Ana, and other Orange county points.

National Irrigation Congress.

Next Monday morning, September 26, the gavel will call to order what will probably be the most important session of the National Irrigation Congress at Pueblo, Colorado. This is the eighteenth meeting of the national organization, and already believers in national control of our great national resources are lining up to battle with another powerful class which believes in state control.

Amongst those who believe in national control are Gifford Pinchot and his large following. On the other side are those who believe that the state will advance more quickly if these lands are opened up to private interests. It is often claimed that with the latter class are lined up the larger interests, and that with the former lie the interests of the people.

The slogan of the Congress is, as it has been for years, "Save the forests; store the floods; reclaim the deserts; make homes on the land."

More than 300,000 families in the United States are today living in homes of their own on lands made productive through irrigation. The 13,000,00 acres under water are yielding up annually harvests valued at more than $250,000,000.

The 40,000,00 acres of irrigable land for which there is water available, will, when reclaimed, provide homes for 1,000,000 families or 5,000,000 men, women and children, and, together with the towns and cities developed in connection with their settlement, will support a population of 10,000,000 people.

Gifford Pinchot's address is on the topic, "The Actual Battle." This gives range for imagination as to his particular handling of it, but it is safe enough to predict it will be along the line of his well known belief in the reclamation service.

Robbing Peter to Pay Paul.

The Cultivator has it on what it considers reliable authority that the railroads interested in California citrus fruit shipments have given a tentative proposition to the growers that if it is insisted that they carry lemons at a rate of $1.00 per hundred instead of $1.15, it will be incumbent on them to make specific weights on all shipments to take the place of conventional or estimated weights, as has been the practice up to the present time. The force and significance of this move will best be appreciated when the several factors to the problem are carefully considered. For instance, to quote the case as it is presented by the railroads: "Ever since the first move on the part of the exchange the Santa Fe and the Southern Pacific have been keeping tab on the actual weight of oranges and lemons, and the statistics prepared show that the average weight for a period of time is 9 per cent greater than the basis on which the rate is now made, which is 72 pounds for oranges and 84 for lemons. Figure this out, and it will only be a matter of about $35 per car if the rate is figured at actual weight. Last year there were more than 40,000 cars of oranges and lemons shipped from the state. If the railroads put this actual weight into effect, it would cost the growers of California $1,400,000 per year, or four and a half times the amount they saved on the lemon rate. The railroad officials say they never would have started the actual weight proposition if the exchange had not been looking for trouble. They are simply waiting to see what the courts decide, but in the meantime they are getting ready for all kinds of things."

The Interstate Commerce Commission has given its decision that the $1.15 rate is excessive, evidently having failed to realize that the conventional or estimated rate per box was in favor of the growers. It is debatable whether this contingency can be overcome. Precedent and custom will hardly present a sufficient argument to sustaint a plea that it should be allowed to so remain, because its application would certainly effect rates on all similar freight shipments. The proposition is certainly fraught with serious economic considerations to the citrus industry in this state.

But the negative influences calculated to overcome the $1 rate do not end here. It is further claimed that the railroads will withdraw the privilege of diverting cars of fruit in transit from one town to another; such diversions will in future be charged in the freight bill. Why should an increase of 50 cents per hundred on the duty of lemons bring about so much trouble? And who will be the man to unravel the complications that seem to be piling up? Who and where is the fellow that weighed the boxes, and who preceded him in overweighing them? Had we better lighten up the packed box in the future?

Decadence of Citrus Trees.

Real estate men and those interested in boosting California, as practically all of us are, regret to hear expression of deterioration of any industry of our state, but as much as we may regret to admit an undesirable situation in our orange groves, plainly a condition exists which calls for earnest consideration. There were many in the convention recently held at Pomona who openly deplored the fact that decadence of orange trees had been brought to the attention of the outside world. Most of these were honest in the belief that the trees had not passed their profit bearing age, but, as was expressed by one speaker, the decadence was rather in the man than in the tree, shown in neglect to renew its profitableness. By resolutions passed, a similar feeling to this was shown to be the unanimous belief of those attending.

A consideration of this question will force upon orange growers the advisability of more conservative figures. Indeed, we believe this will be the part of wisdom for several reasons. As one speaker remarked, "Why doesn't the assessor visit my place when he figures high values upon orange land; my trees don't pay, and the assessment rate is altogether too high." Therefore, if it is a possibility that an orange grove ceases its profitable producing in a score of years, the profit and loss account must be charged with an amount sufficient to cover this deterioration. Again, when Congress has to deal with an increase or decrease in tariff, claims for great profits made in California will be used liberally to force a lower protective rate.

It goes without saying that California has thousands of acres yet undeveloped, and this development must come not only from our own efforts, but from inducing immigration of new blood and new capital. This the state needs and must have, but let us figure more intelligently than we have in the past, and induce people to come by telling them the truth as to what orange and lemon and other industries can do for them and have done for us.

The official call for the Dry Farming Congress to be held in Spokane, Washington, October 3-6, directs attention to an event which will mean much to farmers of semiarid America. The people of Spokane are putting forth every effort to make this a notable meeting, and the energy of that town will be remembered by those who attended the Irrigation Congress held there last year. In addition to the Congress will be held a Dry Farming Exposition in which there are expected to be 5000 entries.

The Fifth National Dairy Show will be held in the Chicago Coliseum, October 20th to 29th, 1910, instead of in Milwaukee, as previously announced.

Agricultural News Notes of the Pacific Coast

Northern California

Santa Rosa vineyardists are securing ten dollars a ton for wine grapes.

The Healdsburg Enterprise reports prunes as going up in price, the best figure realized was 5¼ cents or $140 per ton.

Central Creamery Company in Humboldt county is making plans for the erection of a dried milk plant to cost about $75,000.

An alfalfa meal mill is to be constructed at Biggs, Butte county. It will contract for alfalfa at seven dollrs per ton delivered at the mill, contracts to cover ten years.

The harvesting of peaches and pears throughout the Maywood Colony (Tehama county) district has just been completed and the crop has been a big one. Prunes and almonds are now being harvested.

The receipts of fruit money at the banks of Vacaville show that the net returns to the growers are over $70,000 more this than last year. In 1909 up to July 28, 551 cars of fruit had left Vacaville. This year on the same date 642 cars had left.

The uses of the great American business hen are certainly increasing. Bihn brothers, of Petaluma, recently gave 1000 head to a church fair in Santa Rosa, presumably to be given away to every handsome girl that will enter a kissing bee or a spelling match.

Mr. Walter Storey of Healdsburg is the owner of a pigeon farm with 2000 head. His market is San Francisco. Shipments are made twice or three times a week, and the birds bring from $3.50 to $4.50 a dozen, varying of course with conditions of the market.

In a comparative statement issued by the California Fruit Distributors published in The Reporter; it is announced that 8,151 cars of fruit have been shipped to the markets of the east from California this season as against 8,067 at corresponding date in 1909. The shipments consisted of cherries, apricots, peaches, plums, pears, grapes and apples.

Two of the prize taking carlot exhibits at the recent Sebastopol Gravenstein apple show were sold by the Earl Fruit Co. The car that was awarded the first prize brought $1,371 at auction in Chicago, which is a fraction over $2 per box for 664 boxes. The third prize car was sold in New York at auction for $2.30 per box. Both prizes were gross.

Manager J. P. Dargitz of the California Almond Growers' Exchange reports that the almond operators are trying to undo the work of that association. They bought Drake seedlings at 10 cents and paper shells at 11 cents, 12 cents and 13 cents, and then resold the Drakes at 11¼ cents, while the better varieties went for 13¾ cents, 11½ cents and 14¾ cents. The exchange has already sold 20 out of 100 carloads which it controlled this season. The crop this year in California aggregated about 200 carloads, and of this amount the trade has already taken up fifty cars.

The taking of the irrigation census in California and Nevada, in accordance with the general census law of 1909, began from state headquarters in Berkeley September 19 and will continue until its completion about March 1, 1911. The information irrigators are required by the census law to furnish is covered by ten different schedules, one each being provided for reclamation service projects, Carey Act projects, irrigation districts, co-operative or mutual enterprises, corporate enterprises, private or partnership ditches, private pumping plants, private reservoirs, private flowing wells, rice irrigation companies, and private plants irrigating rice.

Central California

San Joaquin Valley fig crop will be ten per cent of normal.

A farmer at Coalinga, Fresno county, has succeeded in growing cotton.

Work at the Spreckels Sugar Factory began on September 1st. The fields all promise an excellent crop.

The veterinarian of Tulare county reports small number of cases of hog cholera with the disease being brought under control.

Suit has been entered by an alfalfa grower at Hanford, Kings county for damages for the destruction of 110 acres of alfalfa by band of cattle.

A prominent dairyman in Modesto estimates that there are ten thousand cows being milked daily in Stanislaus county. He is also of opinion that there is room and need for ten thousand more.

The Standardization Association has had posted in the Lodi fruit sheds the following notice: "For the purpose of collecting the tax levied by the San Joaquin County Standardization Association, one-fourth cent per package will be charged on all grapes shipped from this shed."

The harvesting of the sunflower crop in south San Joaquin is going on. Hundreds of acres were planted to sunflowers this year, as the seeds bring a good price when sold to the oil manufacturers. A. G. Ballenger has fitted out a sunflower harvester with which he is now at work at Manteca.

At a recent session of the Tulare county broad of supervisors an appropriation of $6000 was set apart for the use of the forestry board in parking the Mooney Grove, now the property of the county. The money will be subject to the demands of the foresters appointed some time ago by the supervisors.

Kings county's raisin crop for 1910 is estimated at 10,000 tons, about 2000 tons more than produced last year. The grapes are now nearly all on the trays and ready for turning. Some early varieties have already been sun-cured and delivered to the packing-houses. The crop this year has been uniformly better and of a better average yield than last year.

The records of the secretary of the Modesto irrigation districts show that 28,196 acres are under irrigation in that section. It shows that the number of trees and vines has decreased this season, while alfalfa has shown an increase. It is stated that many of the growers, discouraged by low prices, have pulled up their grapevines and replaced them with alfalfa.

The proposed West Side Irrigation district of the San Joaquin embraces all the irrigable lands on the west side of the valley extending from Vernalis on the north to Whites Bridge on the south and according to the latest geographical survey embraces 2,001,300 acres of land situated within the following counties, to-wit: Merced county, 88,500 acres; Fresno county, 668,200 acres; Stanislaus county, 44,600 acres.

It seems reasonable to assume that cotton may be grown in some of our interior valleys outside of the Imperial section. Samples of cotton have been produced in Tulare county that certainly possess quality. A. Sustarich, one of the well known farmers of the Poplar section, has been conducting a few experiments in the culture of cotton and he is convinced that the Porterville region will produce as good cotton as any portion of the country. He raised only a few plants this year, but quite enough to show that the plants will grow there. Samples placed on exhibition at the Messenger office, which men, experienced in the cotton industry, have pronounced the equal of the best of the long stable grown in the south.

Southern California

The Fullerton chamber of commerce will take steps to interest ranchers in a project to build dykes to prevent the overflow of the Santa Ana river in that section.

One company has filed on 2000 inches of the Mojave river in San Bernardino county and will plan to irrigate a large tract of land.

W. B. Morgan, fish, fire and game warden of Los Angeles county, died on Friday afternoon last, at the home of his daughter, Mrs. Henry Baetz, 526 Sichel street, Los Angeles.

C. Paulsen Visel, has leased 2000 acres of fine grazing land in the San Jacinto mountains from the Southern Pacific Railroad and in a short time will stock it with a big herd of cattle.

Los Angeles' Board of Health is sending out a circular letter to growers and shippers, accompanied by a copy of the ordinance of this city, warning them to be careful and not ship wormy fruit to this market.

The largest producer of walnuts in this country is Orange county. The crop is now being harvested, and it is estimated that 7,000,000 pounds will be harvested from that county alone. This means returns of $800,000 to $900,000 at current prices.

A deal is on for the sale of the Gregory & Langford peach orchard of 418 acres, near Colton, together with the San Bernardino sewage contract by which irrigation is secured for the tract, to a syndicate of Los Angeles and Santa Monica parties.

The beet growers of Compton have incorporated under the name of Beet Growers Realty Company and bought ten acres on Temple street south of Main. This will be leased to the Government for a term of five years for the purpose of carrying on experimental plantings to sugar beets.

The July pool of the Tustin Lemon Association has been issued and pays to its growers from 1.47 to 4.39 cents a pound or an average of 3.84 cents on all grades. Seven cars have been shipped during the month of August all of which sold at good prices. Another sweat room has been added to the packing house.

Stockholders of the Glendora citrus fruit association recently held their annual meeting. The report of the secretary showed that 152,510 boxes of Washington Navel oranges, 41,032 boxes of Valencias and 7,796 boxes of miscellaneous oranges were marketed during the season. For this fruit the growers received $275,268.98. The average for navels was $1.28½ per box.

For several months many orange growers located witihn a mile or two of the Riverside and Colton cement plants, have complained that the dust from the large cement plant injured their oranges. Some weeks ago the growers near the Riverside plant also organized, with a view of taking some steps to overcome the nuisance. In view of the installation of a newly patented process for its control that will put the dust nuisance out of business altogether, it is claimed there will be no possible chance for future complaints.

The Riverside Press says that a number of young men was encounttered in the Cleveland forest reserve gathering pine cones for the government. No less than nine were employed, some making as high as $5 and $6 a day. The government pays 30 cents per sack for the cones. The cones must be cut from the limbs with a pair of clippers, just as an orange is picked. They are dropped to the ground, where they are sacked and checked up by the rangers. At the rangers' headquarters the cones are spread in the sun and air on canvas, the seeds popping out after a brief exposure. The seeds are then sacked and stored for future disposal.

The Coast

Rains did much damage to harvested grains of Nez Perce, Idaho, the first of the month.

One apple grower at North Yakima, Washington, has netted over $500 an acre from his winesaps.

A large prune grower at Salem, Oregon, is urging the doubling of the planting of prune orchards.

A station under direction of the forest service will be maintained on the Island of Mindanao, P. I.

Weiser, Idaho, is shipping both prunes and apples. Some days as high as seven cars of prunes are forwarded.

That the potato crop in Oregon will be short is said to be a certainty. The rain that has fallen came too late to do much good. Hot winds a short time ago did much damage.

The first actual movement of winter apples this season at Wenatchee, Washington, took place September 5 when a mixed carload of Winter Bananas, Grimes' Golden and King David left for the Chicago market.

Through Mr. H. P. Wood, secretary of the Hawaii Promotion Committee, at Honolulu, two introductions of seeds of rattan palm have been made from Java. It is reported that a large percentage of these have germinated and are doing well.

From the Bitter Root section in Montana ten cars have been shipped so far, and the work of packing and picking is now on in earnest. The apples shipped so far are: Wealthy, Alexander, Iowa Beauties, Dutchess, Yellow Transparent and Transcendent crabs.

The entire output of apples from the Hood River (Oregon) orchards has been bought by Steinhart & Kelly of New York. The crop this year will amount to 400 cars, or about 250,000 boxes, consisting of Spitzenbergs, Newtowns, Arkansas Blacks, Ortleys and Jonathans.

Umatilla county farmers have sold half of the wheat produced there this season, or 2,500,000 bushels. The market at the latest quotations seems to be on the down grade with 76 cents the mark for club. Fortunately the heaviest selling took place in the earlier part of the last 10 days and most of the growers secured 80 cents, not any selling below 75 cents.

Recently W. B. Cloyd placed on exhibition in the pagoda of the Yuma (Arizona) Commercial Club at the Southern Pacific depot a bunch of Peruvian alfalfa on which the seed has almost ripened. This was from the second crop raised on the same land this year. The first crop produced 600 pounds to the acre and much of it has been sold at fifteen cents per pound which means an income of ninety dollars per acre.

The twenty-fifth annual fruit show of the Oregon Horticultural Society will be held in Portland from November 30 to December 2 inclusive. The preliminary announcement gives the information that not only will apples and pears be entered in competition, but prizes are also offered for grapes, nuts, dried fruits, dried berries, dried vegetables. Fine lithographed diplomas will be given all prize winners. Printed prize ribbons to winners.

The horticultural staff of the Hawaiian Experiment Station has been augmented by the appointment of Mr. Valentine Holt, a part of whose time is being devoted to horticultural work. Mr. Holt has collected and prepared exhibits of a large number of fruits and other products shown at the Alaskan-Yukon-Pacific Exposition. He has begun work in the selecting and propagation of varieties of papayas with a view of systematic breeding.

Baby Chicks, Laying Hens, Pullets, Etc.

On hand every day of the year. Free 32-page catalog gives prices, descriptions, etc. We ship to every town in the West. Our prices are lower than any other dealer, as we buy more and sell on less margin of profit. We can fill orders for White and Brown Leghorn hens, 10 months old, Barred Rock, Rhode Island Red and Black Minorcas 10 months old. We have Black Minorca, Rhode Island Red and Buff Orpington pullets 2, 3 and sometimes older. Send today for catalog. State what yo' wish—kind, age and quality, and we can name the price.

We can fill orders for Reds and Barred Rock chicks ever' Tuesday at present.

Pioneer Hatchery Co., 112 E. 8th, Los Angeles

If you want your hens to lay more of those high-priced eggs, feed

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Nothing better made for the purpose, and the price is now only $1.80 for 75-lb. sack, or $45.00 for a ton. If not sold by your dealer, sent to us. Or, if you are distant from Los Angeles, and have good grain products cheaper than to ship them in, you can make your own Egg Food as good as anybody's.

Egg-More Booklet

tells you how. It is free. Send for it. Send us addresses of 5 persons in your vicinity who have fowls, and we will send you an Anchor Egg Separator. Or, for 20 addresses, we will also send The Poultry Manual, a book well worth 50c, both postpaid.

West Coast Mill

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Los Angeles, California

Coulson's

EGG FOOD

If you were going to erect a large building, you would consult an architect—if you wanted some legal papers drawn up, you would go to a lawyer—because these men have made a special study of their respective professions.

The same principle applies to the feeding of your chickens. Presumably you have not the machinery or formula for making an egg food so that it will be just what your hens need.

That's why you should buy COULSON'S EGG FOOD. It is the result of years of study—it is scientifically mixed by experts with the right proportions of the various ingredients to give a balanced ration.

COULSON'S EGG FOOD means a healthy stock, with great laying power and eggs of quality. Saves you the time of mixing—provides a better feed—makes more eggs—means more profit, as COULSON'S EGG FOOD more than pays for itself, through making hens lay to their full capacity.

It is especially advantageous to use it at the present time, when the price of eggs is beginning to increase, and when also you are anxious to have your hens in good condition for the molting season.

Hens eat only what they like, but there are many foods they must have, and which must be mixed with their regular food so that they get the desired quantity. The only way the food can be mixed is by improved machinery—that's why you should feed COULSON'S EGG FOOD.

Get it at your dealer's; anyway send for our Catalog which tells about the famous Coulson products and gives valuable information about Poultry Raising.

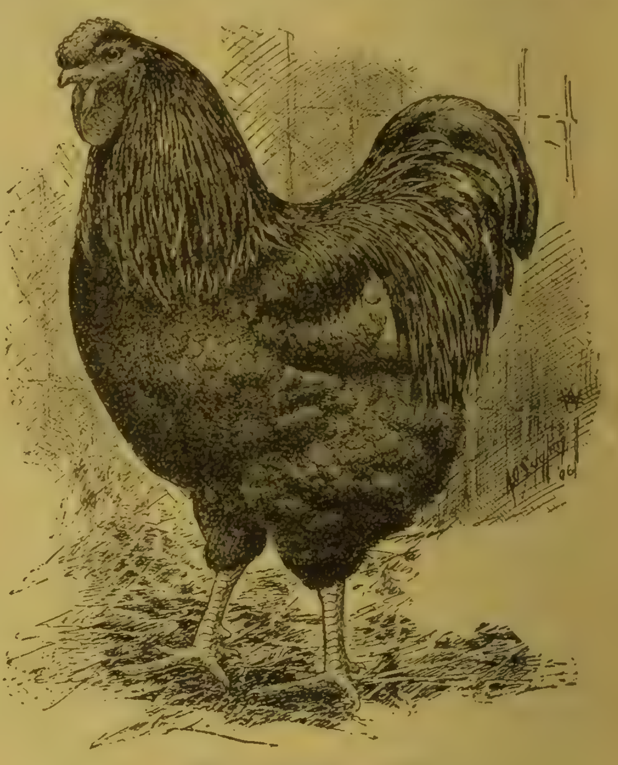
Coulson Poultry & Stock Food Co., Petaluma
Germain Seed & Plant Co.,
Distributing Agents for S. California

Profit in the Poultry Yard

THE INDIAN RUNNER DUCK.

ALMOST every one has raised a few chickens some time or other and knows something of the magnitude to which the industry has now grown, caused by its splendid inducements of recreation and pecuniary gains, but to date, duck culture is in its infancy and to those who now take advantage of the immense possibilities in its development, there is a snug fortune. Heretofore the industry has been hampered by the lack of a suitable duck—in combining both utility and fancy, but as the ideal has now been reached in the Indian Runner, it offers unheard of advantages and subsequent profits.

The Indian Runner Ducks originally came from the West Indies, where they had been bred for years as egg producers, making their first appearance in the United States some fifteen years ago. They derive their name from their native land and their very racy, upright carriage and activity.



Buff Wyandotte Cock.

In general they are admittedly the most beautiful in color markings and distinctive in type of any of the duck family.

In color they are fawn and white, being handsomely marked about the body and head. Bill is yellow splashed with green when young, and green with black bean when fully developed; shanks and toes a deep bright yellow. The body is long and narrow and carried very erect; neck long and thin with finely formed, long head.

In size they are not so large as some, the standard weight being 4½ pounds for the drake and 4 pounds for the duck, but they usually run over these weights. While lacking bulk as market ducks they excel in quality of meat, which is fine grained, juicy and especially well flavored. They grow rapidly and reach a marketable size of 3½ to 5 pounds in ten weeks.

The chief value of the Runners and the point which has made them the most talked of in duck history, is their great laying habits. It is from this fact they have been aptly termed "the Leghorns of the duck family." In England breeders claim individual records as high as 260 eggs per duck in a single season, but we consider this unusual and unsafe for calculations here. A pen of four ducks with good care often produce 1,000 eggs per year, and a flock of 100 will run from 175 to 200 eggs per duck in 12 months. They are very persistent layers, laying nearly every day after March, continuing through the summer, fall, winter and earl spring.

Contrary to the general idea of duck eggs, eggs from the Runners are of the very best quality and are superior to hen eggs for staple and fancy edible use. They are much larger than hen eggs, two of them being fully the equal of three of the hen's product, and are of such a mild, delicate flavor that a brisk demand has been created for them in the cities at an advance from 5 to 20 cents per dozen over hen's eggs.

As the Runners are related to the wild Mallard, they are very hardy, and being of such an active nature more can be yarded on the same ground than of other ducks, and if permitted free range will forage and gather the greater portion of their living.

They are not troubled with contagious diseases; are not infected with lice or other vermin; do not have scaly legs; are not subject to roup. They require no water except for drinking purposes and will thrive on any kind of land in any locality. A 24-inch fence will confine them and makes yarding a small cost. The fence can be portable by driving the stakes into the ground and gates are not needed as the attendant can step over the fence.

Yards 24 by 100 feet will accommodate a pen of 30 layers, thus minimizing space. The houses need not be costly or especially built for warmth, but should be dry. Eggs are usually fertile and can be hatched in incubators.

Ducks are profitable as layers for three years, and the drakes are fit to use as breeders for eight. They fatten readily and bring good prices. Their feathers are quite valuable and net a substantial revenue.

There is a steady demand for fancy show individuals, ranging in price from $5.00 to $25.00 each, and an overwhelming demand for eggs for hatching purposes, at attractive prices.

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ARNOTT ORCHARD CULTIVATOR
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Five feet wide.
Spring teeth if wanted.
Horizontal lift.
No neck weight.
Steel and Malleable Iron. Dust proof wheels........ **$45.00**

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3¼x10 Skeins. 28x30 in. wheels..**$32.50**

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West Coast Mill
Office and Salesroom
115 Winston St. - Los Angeles

The University Farm School began on Monday the fifth.

Taking everything in consideration, there is certainly no other duck that affords a greater profit for the time, experience and outlay of capital than the Indian Runner. And from their many advantageous points we predict for them a great future.

In conclusion, we wish to state that the possibilities of the Runners have been almost unlimited and as meritorious as they are, are going to be pushed to the front more and more. The better breeders have banded themselves together for concentrated effort by the organizing of a club, and through it we hope to have "more and better" Indian Runners.—American Poultry Advocate.

POULTRY QUERIES.

Inflammation of the Liver.

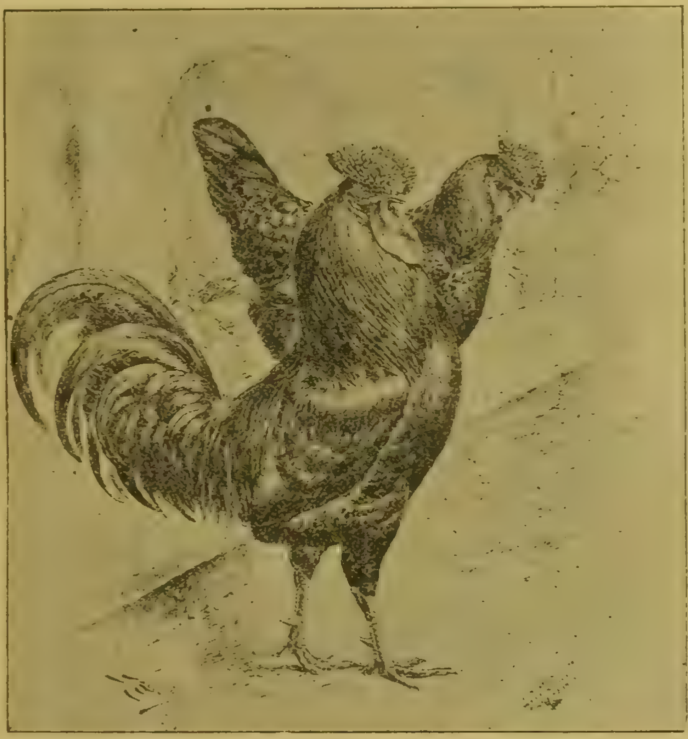
Some of my chickens have been having what appears to be indigestion. They become dumpish, usually refuse food, and the droppings are very soft, bright green or light yellow and odorless. One or two have had very light attacks, one had very high fever, one was crop bound with a very full crop and remained in that condition for about ten days in spite of treatment but after I had operated on it to remove contents of crop its recovery was rapid. My usual course of treatment with them is to give a dose of castor oil, isolate them from the rest of the flock and give them water containing one of the commercial disinfectants with chick feed and scalded sour milk when they begin to show hunger.—May B. Ames, Riverside.

You fail to mention the condition of comb in your birds; if dark purplish in color, general ruffled appearance of plumage, and brownish watery discharges, it indicates congestion of the liver. If the droppings turn yellow, inflammation of the liver has developed. Liver diseases are usually due to overfeeding. If the stage indicates congestion, use a good liver pill, and of course alter wrong conditions. If allowed to reach the stage of inflammation, treatment is invariably of no avail. As a general proposition, it is a good practice to always quarantine ailing birds from the healthy ones.

Enlarged Crop.

Can you give the cause and remedy for an enlarged crop? A seven months old turkey's crop is so large it strikes the knees; it seems to be filled with water, otherwise the bird is healthy and eats well.—M. M. Hix, Imperial.

Enlarged crop can be treated by cutting out a part of the skin and sewing up; usually a hazardous operation, and hence hardly worth the trouble. We suggest sending the bird to te block, then to the pot, and then to the family table, which is the usual ending of all good turkeys.



Pair English Red Cops.

Feed for Poultry.

Is barley and alfalfa meal a complete feed for laying hens, at least as much so as whole wheat? Do you know of a cheap hand mill for grinding alfalfa?—W. T. F., Orland.

Barley and alfalfa, according to analysis, will make almost a perfectly balanced ration, but we do not believe as good results will come from feeding such ration as a more varied one. The hens will have keener appetites and make better use of elements of food they relish. It goes without saying that a certain amount of change in stock feed is as desirable as with humans. A little wheat, a little corn and also a limited amount of meat would, we believe, more than pay for the additional cost. Dr. Twombly, at one time in charge of the poultry department of the Cultivator, maintained that barley was almost a completely balanced ration. As to a grinder we cannot give you information other than that the usual method where the commercially ground meal is not used, is to set the cutter so as to chop the hay in very short lengths. These clippings are then thoroughly moistened with hot water, covered and allowed to steam, when poultry takes to it almost as readily as to green cut alfalfa.

THE ENGLISH RED CAPS.

Sometime during the late eighties and the early nineties, there were a number of fanciers in and about Los Angeles that gave this breed some attentioin; of late years it has, however, apparently gone out of fashion. It belongs to the English class, and stands rather higher than any of its classmates, as a good egg-producer, records of 200 eggs per hen being not unusual. The most prominent feature of the variety is what gives it its name, the comb being bunchy and cap-shaped as shown in our illustration. The ground color of are striped with black; beak horn plumage is red. In cocks the hackles color; eye red; headgear red. Males weigh about seven pounds and females a pound lighter.

THE FARMERS' FOWL.

Of the American class the group of Wyandotte varieties has always been popular in California, with possibly the Whites slightly in the lead. This popularity is based quite as much on economic grounds as on grounds of beauty, as the bird possesses a symmetry and carriage peculiarly its own and of graceful curves. The young mature rapidly, and for this reason the Wyandotte has always possessed an attraction for broilers, fryers and roasters. The hens are good layers of fair sized eggs possessing a brown or tinted shell. They stand confinement well, and are considered among our best all-purpose breeds.

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I Have Ten Hens and Get Ten Eggs Each Day

by feeding "Lee's Egg Maker." Without waiting another day, go out and count your hens—count them carefully. For a week keep an accurate daily record of the eggs you get. The guarantee below means *you*.

WE GUARANTEE

that no matter what you are feeding, and regardless of the number of eggs you are getting at the present time, if **Lee's Egg Maker is added** to the daily ration — make a portion of it — the increased egg yield resulting therefrom will more than pay the cost of the Egg Maker, cost of labor required, and **100 per cent profit** on said labor.

We don't care what your hens are doing *now*, we ask you to buy Lee's Egg Maker on our *guaranty* of an *increased* egg-production at a *reduced* feeding cost. Could we make you a better proposition?

The amount of good *digestible* protein is what counts for results in poultry feeding, and America's big feeders say Lee's Egg Maker contains more *digestible* protein than any other poultry food they can buy.

Lee's Egg Maker is almost entirely a meat food and with an actual tested protein feeding value in *excess* of *80* per cent, and you'll find in it the essentials entirely lacking in other prepared poultry food. The best feeding authorities in the country endorse it—and *use it*. *You* can't afford *not* to feed it, whether you have 10 hens or 1000, the proportionate profit would be the same.

Price: 2½ lb. pkg., 25 cts., 25 lb. pail, $2.00. Ask your dealer or send direct to us. We pay freight in 100 lb. lots.

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Helps chickens to digest and assimilate all their food, makes hens lay right up to molting and starts them laying quick after the molting season.

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Best to prepare your summer plowed ground and best to keep it in good condition until seeding time. Write for particulars.

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Leading Horticultural Journal of the Pacific Coast

Edited by .
Henry W. Kruckeberg

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POULTRY SHOW DATES.

North Yakima, Washington, Sept. 26-Oct. 1, 1910. Washington State Fair. John W. Pace, Secretary, Harry H. Collier, Superintendent.

Stockton, Cal., Nov. 8-12, 1910. First Annual Exhibition of the San Joaquin County Poultry Association. Eugene P. Sabin, Secretary, Stockton.

Oakland, California, Nov. 22-27, 1910. Annual Exhibition of the Alameda County Poultry Association. E. K. Healey, Secretary, Alameda, Cal. tary.

Seattle, Wash., Dec. 5-10, 1910. F. E. Barth, Secretary.

Portland, Oregon, Dec. 5-10, 1910. J. C. Murray, Secretary; M. W. Coates and Harry H. Collier, Judges.

Petaluma, Cal., Dec. 8-11, 1910. Fourth Annual Poultry Show of the Petaluma Poultry Association. H. R. Campbell, Secretary, Petaluma.

Santa Barbara, Cal., Dec. 18-19, 1910. The annual show of the Santa Barbara Poultry and Pet Stock Association. W. E. Lingard, Secretary, R. F. D. No. 2, Santa Barbara, Cal.

Ashcroft, B. C., Dec. 23-31, 1910. W. Maxwell, Secretary; H. H. Collier, Judge.

Tacoma, Wash, January 3-11, 1911. Frank L. White, Secretary, South Tacoma; Miller Purvis, Judge.

San Diego, Jan. 4-5-6-7, 1911. San Diego Pigeon and Pet Stock Club. A P. A. rules. W. C. McDougal, Secre-

Los Angeles, Cal., Jan. 5-11, 1911. Annual of The Poultry Breeders Association of Southern California at Chutes Park. A. H. Memler, Secretary, San Gabriel.

Colfax, Wash., Jan. 10-14, 1911. H. Rosenkranz, Secretary. H. H. Collier, Judge.

Walla Walla, Wash., Jan. 17-21, 1911 H. Dickinson, Secretary; H. H. Collier, Judge.

Jerome, Idaho, January 24-28, 1911. Wm. N. Hardwick, Secretary.

POULTRY AT THE ORANGE STREET FAIR.

New Orleans has her Mardi Gras, Los Angeles her Fiesta, and Orange has her street fair, which in some respects is more strikingly original, and certainly very unique. The dates are September 22, 23 and 24. Not the least of its attractions will be a fine showing of pure blooded fowl, for which there will be an entry fee of 25 cents per pair on fowls and chickens and 50 cents for pens consisting of male and four females, any age, of the same variety. Birds entered in pens may compete in pairs when properly leg-banded to designate exhibitor's choice. The awards will be $1.00 and ribbons on pairs of all leading varieties for first prize, and ribbons for second prize and to designate winners of specials. An entry of 10 cents will be charged on bantams and pigeons, and prizes of 25 cents on pairs with ribbons will are not awarded in classes or on specimens from failure to fill, the committee reserve the right to re-adjust same.

Something like 50 special premiums have been offered by the enterprising business men of Orange, in addition to which there are three silver cups and sweepstakes.

THE SAN JOSE SHOW.

Premium lists and entry blanks to the San Jose show coming off October 5-8, have been issued, and are now in the hands of breeders. This fixture promises to open the regular show campaign in good shape. Owing to the dates being before December 1st, when the weight clause goes into effect, the show will be judged by the comparison method, and by the rules of the American Poultry Association. Those who have in the past entered birds say that the San Jose is the one show that no exhibitor can afford to stay away from. No pains nor expense are being spared to make it better and more pleasing to every exhibitor. A first class superintendent, in W. E. Lewis, is assured to look out for the welfare of birds, and one of the best known and well-liked poultry judges, in Robert J. Venn, of Fresno, has been selected. The great Auditorium Rink, where the show will be held, is centrally located.

General Agriculture

CONCRETE FENCE POSTS.

CONCRETE—cement, sand, gravel, and water combined in proper proportions—has become one of the leading building materials of the day. It has shown its worth as a substitute for wood; houses built entirely of cement, the trimming and supports of wood being merely for decorative effect; it is used by the Government, by railroads, by farmers in hundreds of ways, either alone or reenforced; and has been found to produce even good fence posts. Its moderate cost, its durability, the ease with which it is handled, the wide distribution of the sand, gravel, and stone of which it is composed, commend it to the consideration of all builders.

As a material for fence posts concrete has been found to possess but few of the disadvantages of wood, to have practically all its advantages, and to be superior in some respects to timber. Of course, the first cost may be more or less than the best wooden posts, but that depends on local conditions—the timber supply, deposits of sand, gravel, and rock, the skill of the workman. If manufactured as usual and cured for three months concrete posts are as good as the best wooden posts. After three years wooden posts possess only one-third to one-half of their original strength, whereas concrete grows stronger with age and needs no repairs as neither weather nor fire injures it. Under ordinary circumstances concrete posts will last forever; and even if in the course of years a few should be broken by unusual strain, it is cheaper to replace them than to replace an entire fence of decayed posts with a material with the same lack of durability.

Concrete posts are attractive in appearance because of their uniform size and color, and can be made either square, triangular, or round, either straight or tapering towards the top. They can be purchased from dealers or made at home, and this latter plan together with suggestions as to the construction of the fence after the posts are made and cured is the theme of Farmers, Bulletin No. 403, recently issued by the U. S. Department of Agriculture. The author takes up in detail the selection of sand, gravel, crushed rock, and cement; the choice of molds—either steel or wooden, and if wooden, the proper way to make square or triangular molds. Reenforcement—the insertion of steel rods or wire in the molds when making the posts, is discussed as to the principle involved and the kinds of reenforcement best suited to certain needs. The work of mixing, molding, and curing is explained with minuteness, and the variety of styles which can be produced described. Under "fence building" is given instruction as to setting the posts, attaching the wire, stretching the fencing, and the use of line anchors. Patents have been issued on special types of reenforcement, and they can not be generally used without danger of infringing patent rights; but none of the simple forms described in the bulletin is patented or patentable, and they are just as good as the special forms advertised and recommended by the agents. No one need hesitate to use the simple form of construction recommended, for it has been in common use in all countries for a number of years, and all claims that the general use of reenforced concrete fence posts is controlled by patent rights are unjustified and untrue.

FARM NAMES,

Another name is added this week to the Cultivator's list. It is the name of a ranch at Covina some 20 miles east of Los Angeles. Information concerning this ranch is sent in by the owners on a beautiful bond embosed letterhead giving the name of the ranch and of its three owners and stating that the owners are citrus fruit growers.

Hespero Arboleda, Covina, Los Angeles county. Owners, M. E. Roush, treasurer, Wm. L. Steele, secretary, and J. H. Breckenridge, managing partner. Regarding the ranch and its arrangements Mr. Breckenridge writes:

"The above is the name chosen by us to designate a 51-acre ranch comprising sixteen acres Valencias, twelve acres navels, five acres lemons, fourteen acres walnuts, the remaining space being covered by a beautiful ornamental park. A pergola in natural wood with name in gilt and black letters suspended by chains marks the entrance to driveway which is studded with Robusta palms and ragged robbins. There is a 600,000 gallon reservoir and 600-foot well appurtenant to the ranch in addition to 100 shares of water stock.

Hespero, Venus as Evening Star; Arboleda, tree plantation or grove of trees. So you have the Star of the West Tree Plantation, or The Groves of the Western Star, or some other free rendering of the words to suit translators' fancy. We shall also use it as our firm name (Aparceria) meaning co-partnership. Mrs. Roush, Mr. Steele and myself constituting the firm. We have been subscribers to the Cultivator and readers for the past eight years and have adopted its "Ranch Name" suggestion as we have many other of its recommendations in ranching.

Although the question of road improvement is of direct interest to the residents of our towns and cities, it is, and must always be, one of prime importance to the farmers. By far the greater mileage of our roads is located in the farming districts, and the chief use of these roads is by the farmers in getting their products to market, and for social intercourse with their neighbors. In recent years the invention of the motor vehicle has served to bring about the general use of our highways by tourists travelling for pleasure, but although this use will doubtless be greatly increased in the future, the bulk of the travel on the country roads will continue to be that of the farm wagon or buggy—T. C. Laylin, Master Ohio State Grange.

Hon. W. A. Evans, Commissioner of Health of the City of Chicago, last week authorized the announcement that his department would offer every assistance possible in making the educational features of the National Dairy Show effective. The campaign made by this department for pure food products has aroused the people of Chicago and this announcement by Dr. Evans is very important,

So long as your knife is a
KEEN KUTTER

it is immaterial whether the handle is pearl, ivory, bone or wood—the blades possess that same distinctive *KEEN KUTTER QUALITY* which makes your knife a lifelong friend.

Keen Kutter Safety Razors give the true barber's stroke and are so scientifically adjusted that they *cannot* shave wrong. Whether used in right hand or left, they shave through light or heavy beard with the greatest ease and comfort.

Let the Keen Kutter name and trade mark guide *you* in *all* tool buying. They are proofs of *true quality.*

Sold for over forty years under this mark and motto:

"The Recollection of Quality Remains
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No. K-1 Silver plated in Genuine Black Leather Case, $3.50
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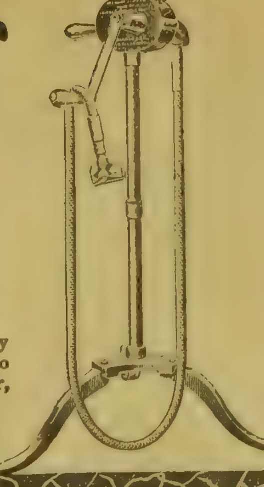

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If you can, you can fit out your poultry house with 1910 conveniences. Other poultry keepers who work at their regular trade or business make hoppers, ordinary and trap nests, fireless brooders, fresh-air doors and windows, portable fences, and even fresh-air and portable houses, during their spare time, and you can do the same. Probably you have never been told how these conveniences can be built—everyone doesn't know these things—but you now have an opportunity to learn from the builders themselves.

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Queries and Replies

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Pruning Pepper Trees.

I have a row of peppers planted along a roadway of my orange orchard which have made a phenomenal growth this year, being planted in April. They have some large branches which are too low, but which I have neglected prunning on account of it being such warm weather. I supposed these should be pruned in the late fall or early spring. But the branches are growing so tremendously, and desiring the trees to grow up as soon as possible on account of the shade, I would like to know if now would be a poor time to prune these trees, leaving just the middle limb and thereby throwing all the growth into this one limb, which will make the trunk of the tree.—Subscriber, Visalia.

We think you have made no mistake in allowing the trees to grow as they have. This first season's effort should be given to establishing a strong root system and trunk large enough to carry weight of top. If side branches are suppressed entirely this is impossible. If the growth is too rank in them, repress by clipping a few inches of the ends of the ends off, thus favoring more upward growth. Then, toward spring cut off clean at junction with trunk. This will give a stocky trunk which may not need staking.

Yellowing Leaves.

Leaves of young orange trees are spotted with yellow. Is this serious sign.—Subscriber, Visalia.

Doubtless chlorosis. It may be from poor physical condition of soil. Cultivate deeply. Break up any hardpan. See answer to similar queries in former Cultivator.

Hard Soap.

Take two quarts of cold soft water, add one can of good concentrated lye, and three tablespoons of pure borax. Stir well with a clean stick and let stand over night. When adding the lye, be careful not to get your face so near that you will inhale the fumes. Next morning warm five pints of grease, rendered and clean from any sediment; it should not be hot, but about milk-warm, simply melted. To this add the solution of lye, and stir until it "sets." I generally have it a little thicker than thick cream, but one must use one's own judgment at first. Pour into a shoe box and put to one side, watching to see that it does not yet too hard before marking it off in bars. This makes ten nice cakes of soap. In the light of the moon is the best time to make soap as it does not shrink away so much at that time.—Mrs. J. A. D., Highland.

Sulphuring Grapes.

I have a grape vine, which bloomed last spring showing very large, finely shaped bunches. Not a grape formed, both the bloom and stem of same, dried and dropped off. What was the matter?.—E. S.

It might be several different things, from this brief discription. I will venture to guess, knowing the region and season ,that it is mildew and if the vine had been carefully sulphured when it first started growth and again when it blossomed the fruit would have set all right. Be patient. Young vines are like other young things often a failure at first. Next season sulphur and see if the fruit does not set properly.—M. E. S.

Olive Varieties.

Will you give suggestions as to three or four of the leading varieties of olives? The Mission, Manzanillo, Obliza, and Ascolano are all favorably spoken of here. Mission are hard to secure this season, and the question with us is what to plant as substitutes. Also what distances for planting olive trees.—C. E. M., Lindsay.

The Mission olive is a little harder to start from cuttings and the nurserymen never have enough of them for their orders.

All four varieties are highly recommended for California planting. The Mission is the only one that has been well tried out as a producer. The Manzanillo has been tried for twenty or thirty years and until last season was satisfactory as a producer. Last season a small number of th ripe fruit showed rot at the pit. W do not know that this will occ again, but if it does come it w spoil the olive for a ripe pickle.

The Obliza is recommended h but has not been very extensi planted as yet. The Ascolano ha poor coloring that makes the fru undesirable for pickling either ripe or green.

The money in olives at present comes from the sale of the ripe pickles, the oil is practically only made to get back the money expended in the harvesting and growing.

Olive trees are usually planted twenty to twenty-five feet apart. At twenty years old the alternate diagonal rows are removed to give the trees more sun and light. We planted over forty feet apart and placed a peach tree between each one. Now the peach trees are about all gone and the olive trees are taking the room up pretty well.

The olive tree does best on heavy land and needs plenty of water, two summer irrigations, one as late as possible helps the fruit out finely as to the size of the berries.—M. E. S.

Trees for Land Not Irrigated.

What are some of the best quick growing shade or ornamental trees to plant between house and road where soil is good alluvial loam, but overful of river gravel, which dries out badly. Even weeds die in summer, but grape vines and alfalfa once established, hold on. Would any kind of hedge make good in these conditions?—B. S., San Luis Obispo.

On land which will grow alfalfa or grapes without irrigation almost any of the ornamental trees will do well. Of course it goes without saying that when the trees are young they should be given some water, with buckets or in some other way, to keep them alive until the roots reach the lower moist sub-soil. Almost any of the eucalypts and most of the acacias, as well as others, would be satisfactory if planted in this soil. Any deep rooting tree which would answer for a hedge would probably do well. We think the Monterey cypress would meet the conditions, as would also the California privet.

Preparing Land for Potatoes.

I have a piece of very sandy land which I wish to prepare for fall pota toes next season. What is best to plant to turn under this winter? Land is irrigated. Will oats, or vetch and oats or Canadian peas make good hay or cow pasture? When should they be sown? When should millet be sown for seed?—Subscriber, Hemet.

The best plant for winter growth for green manuring is the vetch, though the Canadian field pea crowds it closely. In this case where you have prepared the land we believe we would plant vetch, and if you desire a greater amount of humus it is possible the addition of a little rye would add to the quantity. We would plant the vetch just as soon as we could get the seed in the ground. Irrigate the land heavily so as to get an early start. Then if there is good fall growth we would plow under in February and plant cow peas for the summer growth. This, again, could be plowed under in June and put in condition for your fall potato crop. Millet should be planted for seed in California in April or May.

Peach Borer.

What shall I do with my young peach trees They seem to be worm eaten about the crown, in many cases so badly that the trees break off at the ground. Only nursery stock planted this spring is affected; seedlings are untouched.—Subscriber, Lakeside.

In this case the inquirer gives such meager details that it is impossible to give a very intelligent answer. "Worm eaten" may mean the work of cutworms, cutting young herbaceous growth until the tree topples over, or perhaps older wood is affected by flat-headed borers working in the heart wood. In the former case, poisoning with bran mash and arsenic is the method to be followed; in the latter probe with wire the wounds in the trees occupied by the borers. In either case the protection of the young trees with yucca tree protectors will be advisable.

Jelly from Tunas.

Mr. G. P. Rixford who is connected with the Bureau of Plant Industry writes us that if the inquirer who wishes to know how to make jelly from tunas will send 25 cents to the Superintendent of Documents, Government Printing Office, Washington, D. C., for Bulletin 113, Bureau of Plant Industry, he will receive a 23-page pamphlet, beautifully illustrated, entitled, "Tunas as Food for Man." This book tells how to make Miel de Tuna and other foods. The so-called jelly is more of a syrup.

Paraffining Orange Blossoms.

Is there a method of putting paraffine on lemon and orange blossoms to keep them indefinitely?—M. F., Pomona.

We cannot give the details of the process, but believe it is simply a dipping of the fresh blossoms in warm paraffine. Of course it must not be too hot or blossoms will be destroyed. Dip not only blossoms but stems and leaves. If any of our subscribers can give us more details of the process they will confer a favor by so doing.

Lotus.

What is the plant I send? It is growing wild over the hillsides and spreading rapidly.—E. F. P., Reedley.

Its botanical name is Lotus Americanus, and it is found plentifully over the hills in the interior. It seems to revel in drouth and heat. There is little prospect of its ever becoming a pest. It is an excellent green manure plant, but we think of little value as a forage plant.

Budding Nursery Trees.

My sour orange nursery trees are from one-fourth inch in size down. Are they big enough to bud this fall? —E. F. P., Reedley.

The larger trees certainly will answer for budding this fall. The budding of the smaller ones will be determined by your experience as you work.

BUSINESS EDUCATION A NECESSITY

The writer recently visited the Isaacs-Woodbury Business College, located on the fifth floor of the Hamburger building, Los Angeles, and was much impressed with the magnitude of the school quarters and equipments, and especially with the character of the training given young people. This is strictly a business school—a miniature business world in fact. The instruction and training are along two main lines—one along the broad, general commercial line embracing the subjects of bookkeeping, banking, corporations, office practice, arithmetic, penmanship, commercial law, business English, spelling, business ethics, etc. This prepares the student for general office work, or for conducting business intelligently either for himself or for others. The other course of training is that which qualifies the student for office work along the line of shorthand and typewriting. It was learned through President Edward King Isaacs that there is constant demand for well-qualified stenographers and general office help, and that the school is unable to fill more than about one-half of the calls made upon it for its graduates.

The great business world is the best field for successful endeavor, and the Isaacs-Woodbury Business College—now in its 27th year, having kept pace with the growth of the city—offers unequaled advantages to ambitious young people desiring to be successful and to make the most of themselves.

Money Making Little Liners

In this department we will insert your advertisement under a classified head for 1½ cents per word per issue. No ad accepted for less than 25 cents. Our classified columns are the clearing house for our many thousand readers.

MISCELLANEOUS.

Learn Wireless and R. R. Telegraphy! Shortage of fully 10,000 operators on account of 8-hour law and extensive "wireless" developments. We operate under direct supervision of Telegraph Officials and positively place all students, when qualified. Write for catalogue. Nat'l Telegraph Inst., Cincinnati, Philadelphia, Memphis, Davenport, Ia., Columbia, S. C., Portland, Ore.

For Sale or Exchange—A No. 1 Twenty Century Carbide Gas Plant, 35 burners strong; with two-burner hot plate. Some globes and burners. Cost $100.00, in perfect order. $50.00 cash or would exchange for Bartlett & Kiefer pears and cherries, if No. 1 stock. Address H. L. Bauer & Sons, 737 Spring St., Los Angeles, Cal.

For Sale—Registered Holstein Bulls; 1 to 2 years old. Some sired by Prince Juliana, brother of former world's record heifer, Juliana De Kol. Dam and granddam, A. R. O. cows. Three record-breakers in some of their pedigrees. M. E. Sherman, Minnewawa Vineyard, Fresno, Calif.

For Sale—Cement pipe tools. Complete set of 8-inch cement pipe tools, including 300 rings. Good condition. 2 jackets, one core, hopper, reamer, tamps, scoop. Rings alone worth price. $75.00 cash, F. O. B. Covina. Ben F. Thorpe, Covina, California.

MACHINERY.

For Sale—Second-hand windmills, tanks, engines and farm machinery that will do the same work as new at half price. Domestic and irrigating windmills and tanks; 4-H. P., 6-H. P. Fairbanks, 9-H. P. Moore, 10-H. P. Lambert, 20-H. P. Fairbanks; like new; 25-H. P. engine and mining hoist; 2-H. P. steam boiler and engine; complete wood sawing outfit, mounted on iron trucks with 9-H. P. engine, complete for $225. Light express wagons, surrey $35, baler, header, gang, disc, road, riding, and walking plows; cultivator, feed rack, wagon tank, fruit crusher, bone grinder, pipe, Fresno and Slip scrapers. Most anything a rancher wants second-hand Demmitt Co., upstairs, 120 N. Main St., Los Angeles, Cal.

For Sale—Gasoline Engines of all sizes, new Alamos, none better on the market. We also have a good stock of second-hand engines taken in exchange, and we guarantee these like new and still save you money. An investigation will pay and convince you. Bailie & Brandt Co., 943-945 N. Main St., Los Angeles.

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The Kruckeberg Press, 123 South Los Angeles St., Los Angeles, Cal., makes a specialty of Horticultural Printing and Engraving. Cuts and illustrations of all standard, economic and ornamental plants on hand and subject to the use of patrons without cost. Samples and estimates cheerfully furnished. Remember, we design, write, engrave, bind and print; in brief, do the "whole thing," at no additional expense to the customer. Correspondence a pleasure.

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For Sale—Los Angeles' new water supply from the Owens River Valley opens up the most fertile land in all Southern California. This land is wonderful in its productiveness beyond belief. Potatoes that run as high as 500 bushels to the acre with an average of 330. Alfalfa 3 tons to the cutting. Timothy with 12-inch heads. Corn 70 bushels to the acre. Famous for onions and hogs. The world's prize at Portland Exposition for honey. The finest apples grown on the Pacific Coast, Spitzenburgs and Wine Saps being the favorite varieties. No better poultry country in California. No other land in California to compare with it. Foothill land with gentle slope, giving perfect drainage. One of the most complete gravity concrete water systems in the State now being installed by men whose irrigating systems in the orange belt of Southern California stand as models for modern orchard irrigating. Water from the hundreds of lakes in the high Sierras. An inexhaustible and assured supply. The Southern Pacific's new main line to the East, now nearing completion, places this valley in close touch with all markets. The choicest apple land will be subdivided into tens, twenties and forties. The elevation is 4000 feet. Typical California summers with no excessive heat and cool and restful nights. Mild winters with thermometer at 10 degrees above being the coldest. Practically no rain, about four or five inches during the entire year. Three hundred days of sunshine. Absolutely no fog. The finest scenery in America. The high Sierras at your very door. Trout streams within walking distance. You can leave the Valley in the morning, go to the summit of the Sierras, 11,000 feet elevation, pass a dozen beautiful mountain lakes and return to your home the same evening. Special inducements to early settlers. This land is not for speculators, but for real serious farmers who know the value of good land, water and climatic conditions when they see them. Will send kodak pictures and full descriptive matter upon application. JAMES R. H. WAGNER and H. S. COOK, Room 13, 329 South Hill St., Los Angeles, Cal.

For Sale—A 20-acre farm for $20 cash and $20 a month; possession now; $90 to $125 per acre; your crops pay for the land. Rich, level land for alfalfa, oranges, almonds, grapes, cows, chickens; abundance of ditch water, for irrigation, for $1 an acre a year. Where else can you get this? In Oakdale Colony, near good town and railroad station, climate delightful. T. Wiesendanger, 207 S. Broadway, Los Angeles, Cal.

Fresno County—For sale, 320 acres; 160 alfalfa, 160 Muscat vines; fenced, cross-fenced, 1000 tons of alfalfa this year, 60 tons raisins, abundance cheap water, fine buildings, implements, 8-ton wagon scale; show profit 20 per cent, can make 30 per cent. Can subdivide. E. E. Bush, 805 Union Trust Bldg., Los Angeles.

For Sale—15-acre vegetable and fruit ranch in the famous Arroyo Grande Valley; 8-room house, barn, etc. Plenty of water. Good nearby markets in oil field. Price $8500, $3500 cash, balance 2 years, 8 per cent. R. M. Plympton, owner, Arroyo Grande, Cal.

For Sale—815 acres in San Luis Obispo County. A typical dairy ranch. Plenty of wood, water, irrigable land, buildings, fenced and cross fenced. Orchards, vineyards, oranges, lemons and walnuts do exceedingly well here. Forty acres of land suitable for these. Price $21 per acre. For further particulars apply to Mrs. F. A. Clink, Pozo, Cal.

2285 Acres Choice, Deep, Sandy Loam—Ideal for subdivision or eucalyptus growing. Can be cultivated any day in the year. Southern Pacific Railroad runs through the ranch. Also close to deep water for shipping. Free from wind and frost. Now all planted to grain. Price $100,000.00 for limited time. Geo. W. Sill & Co., Watsonville, Cal.

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For Sale—A 14-acre farm, good for alfalfa, orchards, or small fruit. Good market, 2½ miles from town, ½ mile from school. Frame house and barn. Price $2250. Robert Werner, Loma Linda, Cal.

Fruits, Flowers, Sunshine, Progress—All these invite investigating beautiful Hemet Valley, Southern California. Booklet free. William Kingham, Hemet, Riverside County, Cal.

For Sale—El Cajon Grant Land. In the heart of El Cajon Valley, 30 acres of choice vineyard, large house, cottage and barn; trays, boxes, etc. Close to proposed electric line. S. B. Hawley, 1548 D St., San Diego, Cal.

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For $1,900, Five Acres—Three, deciduous orchard; two, alfalfa. Full water right. F. Neal, Hemet, Cal.

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For Sale—Eggs for hatching, Black Minorcas, Barred Plymouth Rocks, and Rhode Island Reds, $1.00 per 15, $5.00 per 100; chicks, 12½c each. Also pullets and cockerels. L. W. Neilsen, R. R. 2, Box A 1, Petaluma, Cal.

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For Sale—One hundred 4 months old, one hundred 5 months, one hundred 6 months old White Leghorn pullets, Watson strain. Healthy and clean. W. J. Webb, Santa Maria, Cal.

Lodi Hatchery—Just hatched, chicks from healthy, heavy laying stock. Booking orders for later delivery. T. C. Hawley, 504 E. Elm St., Lodi, Cal.

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Day Old Chicks—Barred Rocks, Rhode Island Reds, Black Minorcas, Brown and White Leghorns. Sussex Poultry Manor, Los Gatos, Cal.

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S. C. Rhode Island Reds—Pure bred stock for sale. Pullets at $1.00 each, cockerels for $2.00. L. Haynes, Madera, Cal.

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WANTED.

Farms Wanted—We can turn a quick sale for you as we are in close touch with buyers everywhere. Let us show you how to save agents' commissions. Or if you want to buy property of any kind, anywhere, write us. American Investment Ass'n., Minneapolis, Minn.

Wanted—Your work pays the expense to learn a trade that pays $5 a day, in a few months' time; electricity, automobiles, plumbing, bricklaying; actual contract jobs; 200 students last year. United Trade School Contracting Company, 647 Pacific Electric Bldg., Los Angeles, Cal.

Wanted—Man and wife to work on an orange orchard. Man to work in the orchard and wife to cook for three or four men. Each must be competent in their line of work and come recommended. Good wages and steady place for the right parties. Apply to R. D. Williams, Exeter, Tulare Co., Cal.

Wanted—Washington Navel and Valencia Orange, and Eureka Lemon trees. State quantity you can supply, also sizes and lowest price. Address P. W. Cheney, 312 Byrne Bldg., Cor. 3rd and Broadway, Los Angeles, Cal.

Wanted—300 farms at once, near coast or good towns. Each must bear close inspection. Can supply buyers and traders for good propositions. Give normal cash-basis price. Parrish Barker, 207 Union Trust Bldg., Los Angeles.

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TREES.

Fine Large Eureka Lemon and Valencia Orange trees, fine for replanting. Choice lot of fine Washington Navels. Order quickly. They are going. Home 'phone 1731. John R. King, Whittier, Cal.

Fruit Trees—Get our advance prices. Choice 4-inch pot roses, 15c. Our tree specials won't last long. Get wise. Ballou's Nursery, Pasadena, Cal.

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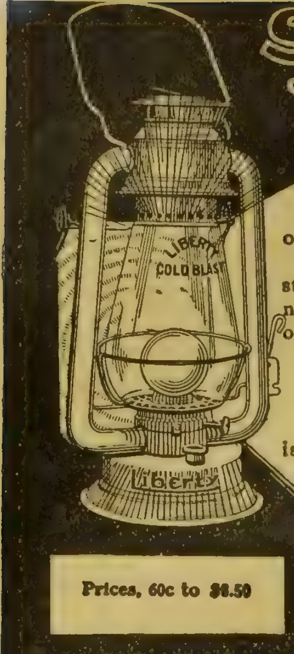

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SUPPLEMENT TO CATALOGUE

These are prices at random from our book. If they don't move you, then tell us what will.

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Bacon from______24c per lb. up
1 Lg. Pkg. Baking Soda______5c
3 Lg. Pkgs. Enameline______25c
½-Lb. Can Baker's Cocoa___20c
50-Lb. Sk. Table Salt only__40c
50-Lb. Sk ½ Grd. Salt only__30c
1 Lb. Grd. Pure Pepper only_20c
1-Lb. Pkg. Corn Starch only__5c
1-Lb. Pkg. Argo Gloss Starch only ______________________5c

Three 1-Lb. Cans Armour's "Veribest" Pork and Beans, only 25c, one dozen 95c.

1 Lb. Coffee for 25c—guaranteed the equal of coffees sold by others at 30c and over.

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Household Department

THE SUM OF LIVING.

If you have a friend worth loving,
  Love him. Yes, and let him know
That you love, ere life's evening
  Tinge his brow with sunset glow.
Why should good words ne'er be said
Of a friend—till he is dead?

If you hear a song that thrills you
  Sung by any child of song,
Praise it. Do not let the singer
  Wait deserved praises long.
Why should one who thrills your heart
Lack the joy you may impart?

If you hear a prayer that moves you
  By its humble, pleading tone,
Join it. Do not let the seeker
  Bow before his God alone.
Why should not your brother share
The strength of "two or three" in prayer?

If you see the hot tears falling
  From a brother's weeping eyes,
Share them; and by kindly sharing
  Own your kinship with the skies.
Why should anyone be glad
When a brother's heart is sad?

If a silvery laugh goes rippling
  Through the sunshine on his face,
Share it. 'Tis the wise man's saying—
  For both grief and joy a place.
There's health and goodness in the mirth
In which an honest laugh has birth.

If your work is made more easy
  By a friendly, helping hand,
Say so. Speak out brave and truly,
  Ere the darkness veil the land.
Should a brother workman dear
Falter for a word of cheer?

Scatter thus your seeds of kindness,
  All enriching as you go—
Leave them. Trust the Harvest Giver,
  He will make each seed to grow.
So, until its happy end,
Your life shall never lack a friend.
—Boston Transcript.

THE RICH POOR HORSE AND THE POOR RICH HORSE.

THE poor rich horse, driven by a tall coachman with high hat and white gloves, looked very gay as he pranced up to the door of an elegant establishment on the avenue. The breast of the noble creature was covered with foam, and he held his head very high. His mouth was stretched wide open, and he tossed his head up and down and back and forth, and pawed the air with his fore-feet. So high were his eyes—almost looking toward the sky—that he scarcely seemed able to see a fat old dray-horse that stood near, regarding him with a sort of sleepy wonder, and considering him as belonging to another "set" than his, entirely. The old horse did not suppose it would do any good to pass the time of day with his neighbor, as the rich horse undoubtedly regarded himself as far too grand to communicate with such a humble personage, so he changed the bit around in his mouth, and was just about to drop into a gentle doze when a sound of distress from the rich horse caused his plain neighbor to open his eyes wide and to regard the former with considerable curiosity, which at length expressed itself in this wise: "You look very gay, neighbor; are you not comfortable with your fine silver-plated harness and shiny trappings?"

"I can hear you, though I can scarcely see you," answered the poor rich horse, "for my harness, although undoubtedly very handsome, is a perfect torture to me. You can see for yourself how my head is tied up by a new-fangled contrivance they call an over-check. My eyes are almost blinded by the glare of the sun, and my neck aches, and my head throbs, and I am really quite miserable."

"I don't know much about check-reins," bluntly said the rich poor horse, "and I have never hauled fine ladies around in their carriages. I supposed, by the way I have seen them petting you with their soft white hands, that they wouldn't want you to be dressed up so you would be uncomfortable or suffer by it."

"O, they don't think," sighed the poor rich horse, "they doubtless suppose I have a very fine time with nothing to do but draw this pretty doll's wagon. If I could only have my choice I would change places with you. I would rather haul a dirt wagon without any check-rein on than to be dressed up in this fine style and suffer as I do."

"You'd find the dirt-wagon pretty heavy hauling," replied the rich poor horse.

"But I'd have my neck free, and be allowed to exert my full strength doing it," retorted the poor rich horse with some spirit, and as he gave an extra strain at his check-rein, the rich poor horse noticed the blood was starting from the corners of his mouth. "Is it the check-rein that makes your mouth bleed?" asked the rich poor horse.

"Oh yes! I'm getting quite used to that. Very often my mouth is so sore I can scarcely eat, and then they think I'm ill, and a surgeon with a great long name—v-e-r-y-t-y-r-a-n-n-y I believe they called him—comes in with a black bottle, and ties up my head, and pours some dreadful medicine down my throat, and whips me when I kick at him."

The rich poor horse now opened his eyes wide and surveyed his companion under the light of some new idea.

"O, well, you don't have much hard work to do," said the rich poor horse, "you ought to appreciate that and make the best of your condition."

"I'll change places with you at any time," replied the poor rich horse. "My load becomes heavier than yours commonly is, because I am so tied back and curbed and reined, that half my strength is spent trying to relieve my aching muscles and neck. When I don't have to wear the over-check, then they put on the bearing (check-rein) rein, which is no better. And then when we fashionable horses grow old, and lose our style and spirit, we are sold to somebody who forgets we are not used to labor which develops the muscles, and we are whipped when we can't pull heavy loads, and have to endure exposure and all sorts of other hardships when the least prepared for them."

"Poor rich horse," said the compassionate attache of the dray, "I think I will try and be content with my lot after this."

Just then the drayman came around with some nubbins of corn. The gay coachman mounted his box and with a crack of his whip sent the poor rich horse flying down the street. The rich poor horse rubbed his nose on his master's shoulder and told him what he had heard about poor rich horses, and the two jogged off together the best friends in the world.—Pleadings of Mercy.

BENEFITS OF CANDY.

Give children plenty of pure sugar, taffy and butterscotch and they'll have little need of cod-liver oil. Sugar is, after meat, bread and butter, easily our next most important and necessary food. You can put the matter to a test very easily. Just leave off the pie, pudding or other desserts at your lunch or mid-day dinner. You'll be astonished to find how quickly you'll feel "empty" again, and how "unfinished" the meal will seem. You can't get any working man to accept a dinner pail without pie in it. And he's absolutely right.

The only thing that can take the place of sugar here is beer or wine. It is a significant fact that the free-lunch counters run in connection with bars furnish every imaginable thing except sweets. Even the restaurants and lunch grills attached to saloons or bars often refuse to serve desserts of any sort. They know their business! The more sugar and sweets a man takes at a meal, the less alcohol he wants. Conversely, nearly every drinking man will tell you that he has lost his taste for sweets. The more candy a nation consumes, the less alcohol.

The United States government buys pure candy by the ton and ships it to the Philippines to be sold at cost to the soldiers in the canteens. All men crave it in the tropics, and the more they get of it, the less "vino" and whisky they want.

In fine, the prejudice against sugar is born of puritanism and stinginess, equal parts. Whatever children cry for must be bad for them, according to the pure doctrine of original sin; besides, it costs money. I know families in the rural districts yet where the head of the family groans over every dollar's worth of sugar that comes into the house as a sinful and "unwholesome" luxury.—Dr. Hutchinson in Woman's Home Companion.

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LYING HURTS THE LIAR.

"All boys," an old philosopher says, "are born liars."

Perhaps it is because lying is the diplomatic refuge for helpessness. The instant we learn to know punishment, desire to escape it becomes a prime instinct.

Morality, like knowledge, is not hereditary, but attained. The child must learn that lying is a sin and a self-injury, just as it must learn by being burnt to avoid the fire.

Until this lesson is learned, the child, youth, man will continue to lie. Many never learn it. Perhaps none ever learn it very thoroughly.

Lying comes not of aggressive shrewdness, but of cowardice and a shallow cunning that is often treacherous and tricks the lie into transparency.

But it is not the danger of being found out by others that is most to be dreaded; far more dreadful is it that the liar must know himself to be a liar.

His self-respect suffers; the leaven in him loses strength and leaves him dead dough.

The cunning that leads to lying is a rot that must permeate the whole character and make a man ever uncertain of himself.

It distorts his perspective, obscures his vision, and warps his comprehension.

Nothing else so shakes the confidence of one's friends as known lying does; nothing so shatters one's own self-confidence as does lying, whether known to others or not.

The tangled web makes it all the harder for the liar to succeed in even an honest undertaking. His lies are a ball-and-chain upon his foot. He flounders along, most of his energies being required to overcome the impediment, while the truthful man easily outstrips him.—Memphis "News Scimitar."

A HERO.

Tommy's mother had made him a present of a toy shovel and sent him out in the sand lot to play with his baby brother. "Take care of baby now, Tommy, and don't let anything hurt him," was mamma's parting injunction. Presently screams of anguish from baby sent the distracted parent flying to the sand lot. "For goodness' sake, Tommy, what has happened to the baby?" said she, trying to soothe the wailing infant.

"There was a naughty fly biting him on top of his head, and I killed it with the shovel," was the proud reply.—Lippincott's.

TO CLEAN PARASOLS.

Do not remove the cover from the frame to launder your parasol. Instead, open it out and wash the covering thoroughly, using brush, cool water and some good white soap. After rinsing, set it in the sun to dry, if the material is white; in the shade, if the material will fade. The wire frame will not rust, and your parasol will be found beautifully clean and dainty. It is well to wash it again in this manner in the fall, and not put it away in a soiled condition. Wrap in tissue paper, then in newspaper.—From Woman's Home Companion for August.

TO REMOVE COFFEE-STAINS.

"Coffee-stains, even when cream has been put in the coffee," says Woman's Home Companion for August, "may be removed from table-linen by rubbing the spots with pure glycerin. Rinse afterward in lukewarm water."

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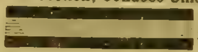

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San Francisco and Los Angeles Produce Markets

Los Angeles Markets

LOS ANGELES, Sept. 21, 1910.

Butter.

The butter market is very strong in tone and an advance is promised, though prices remain as last week.

Price to trade 2½c in advance of the following Produce Exchange quotations:

Extras	.32½
Firsts	.31
Cooking	.25

Cheese.

Northern fresh	.17@17½
Anchor, large	.18
Oregon Daisy	.18½@19
Imported Swiss	.30
Domestic Swiss	.23@25

Eggs and Poultry.

Eggs dropped two points, and at present quotations the market is very firm.

Paying price f. o. b. L. A. is:

Local ranch candled	.41
Case count buying price	.37
Eastern fresh	.35
Eastern Storage	.30@32

Dealers pay for live poultry f. o. b. L. A.:

Hens, per lb	.17@19
Roosters	.8@16
Broilers	.17
Fryers and Roasters	.17@18
Turkeys	.22@26
Turkeys	.25@26
Geese	.11
Squabs, per doz.	.1.50

Live Stock.

The following quotations are f. o. b. Los Angeles, on all stock:

Hogs, 175 to 200 lbs.	.9.60
Prime Steers	.5
Heifers	.4@4¼
Calves, per lb	.6½
Sheep ewes, per head, shorn	.4.60@4.50
Lambs, per head	.3.50
Wethers, shorn	.4.00@4.50

Potatoes.

Wholesale prices are:

Local Burbanks, ctl	.1.25@1.40
Highlands	.1.40@1.50
Salinas	.1.65
Sweets, Yellow, per ctl.	.1.75@2.00

Onions.

Wholesale quotations:

Yellow Danvers	.1.50@1.65
Australian Browns	.1.50@1.65
Silverskins	.1.25
Garlic	.7

Vegetables.

Wholesale quotations:

Asparagus	.15
Artichokes, northern, doz	.1.00
Beets, sack	.90
Beans, green	.3@4
Beans, Limas	.6
Brussels Sprouts	.12½
Bell Peppers, lb.	.4@5
Green Chilis	.3@4
Cabbage, per sack	.1.00@1.25
Cucumbers, per box	.30@40
Celery, crate	.2.50
Cauliflower, per crate	.1.50
Carrots, per sack	.90
Egg Plant, per lb	.4
Green Corn, box	.60
Green Onions, per doz. bunches	.35
Lettuce, choice, per crate	.1.25@1.50
Leeks, per doz	.35
Okra, lb.	.6
Peas, per lb.	.6½@7
Pumpkins, lb.	.1@1½
Parsley, per doz. bunches	.25
Parsnips, doz. bunches	.20@25
Radishes, per dozen bunches	.10@15
Rhubarb, crimson winter	.1.00
Spearmint, doz. bunches	.30@35
Spinach, per dozen	.20@25
Hubbard Squash, lb	.2
Summer Squash	.40
Turnips, sack	.1.00
Water Cress, doz. bunches	.25@35
Tomatoes, lug	.30@60

Citrus Fruits.

Valencias	.4.00
Grapefruit	.2.00@3.75
Lemons	.4.00@5.00

Fresh Fruits.

Wholesale prices on the market are:

Aligator Pears	.2.00@2.40
Apples, Bellflowers	.85@1.15
Gravensteins	.1.00@1.60
Greenings	.75@1.00
W. W. Pearmains	.1.00@1.25
Fall Pippins	.85@1.00
Crabapples	.1.50
Casabas	.1.50
Cantaloupes, crate	.2.50
Figs, box	.1.00@1.25
Grapes, lug	.75@1.00
Grapes, Tokays	.1.25@1.50
Pears, box	.75@1.00
Bartletts	.2.00@2.50
Strawberries	.8
Raspberries	.10
Blackberries	.8@9
Peaches, box	.75@1.00
Plums, box	.1.50
Prunes, box	.1.50
Quinces, box	.1.00
Watermelons, lb.	.1½@2½

Dried Fruits.

Wholesale prices are:

Apricots	.12@13
Evap. apples, fy., per lb.	.8@8½
Peaches	.10
Pears	.10@12
Nectarines	.7½@9
Prunes	.5½@10
Plums	.11

Beans Dried.

Wholesale quotations:

Limas	.5.00
Black eyes	.5.75
Pink, No. 1.	.6.25
Lady Washington	.4.50
Small white	.4.50
Garvanzas	.4.50
Lentils	.8.00

Nuts.

Wholesale quotations are:

No. 1 soft shell walnuts	.15@16
No. 2 soft shell	.10
Almonds, IXL, per lb.	.17
Pecans, polished	.15@16
Peanuts, Eastern	.7@7½

Honey.

Wholesale quotations:

Extracted water white	.9
Extracted light amber	.7½
Comb W. W.	.18
Light amber	.15
Beeswax	.30

Hay.

Buying prices f. o. b. cars L. A. are:

Barley hay	.8.50@10.50
Alfalfa	.9.00@10.00
Wheat hay	.10.00@11.00
Tame oat	.10.00@12.00

Grain.

Wholesale selling price f. o. b. Los Angeles:

Wheat, new, per ctl.	.1.85@1.90
Corn	.1.75
Egyptian corn	.1.85
White oats	.1.85
Seed Rye	.2.00
Seed Barley	.1.30

Feed Stuff

Wholesale selling price f. o. b., Los Angeles:

Cracked Corn	.1.80
Cracked Wheat	.2.00
Shorts	.1.80
Bran	.1.55
Oil cake meal	.2.50
Feed Meal	.1.85
Rolled Barley	.1.15

San Francisco Markets

SAN FRANCISCO, Sept. 20, 1910.

Butter.

Butter dropped a cent on Monday below quotations prevailing during the last of the week, though many holders are refusing to sell at present quotations. Quotations are now just as last week.

The official quotations of the San Francisco Wholesale Dairy Produce Exchange for today are as follows:

California extras, per lb	.31
California firsts	.30
California seconds	.28

Cheese.

California flats, new	.15½@16
Cal. Young Amer. fy. new	.15½@16
Oregon, Fancy	.16½

Eggs and Poultry.

Eggs have constantly advanced and now are in strong demand with strong market conditions.

Official quotations of the S. F. Wholesale Dairy and Produce Ex. are:

Fresh ranch extras	.41½
Firsts	.38
Seconds	.30

With two cars of eastern poultry thrown on good supply already in market, the conditions are not strong and quiet times are promised for some days.

Hens, per doz.	.5.00@10.00
Roosters, per doz.	.5.00@8.00
Fryers, per doz.	.4.00@5.00
Ducks	.4.50@8.00
Broilers	.2.75@3.25
Spring Turkeys	.26@30
Geese	.1.50@2.00
Goslings, pr	.2.00
Pigeons	.1.50@2.25
Squabs	.2.25@2.50

Live Stock.

San Francisco prices gross weight:

Steers	.3¾@5¼
Cows and heifers	.2¾@4¼
Hogs	.6@9¼
Calves per lb	.4½@6
Milk Lambs, unshorn	.6@6¼
Wethers No. 1	.4½@4¾
Ewes No. 1	.4@4¼

Potatoes.

Wholesale market quotations:

River White, new box	.90@1.10
Salinas Burbanks	.1.40@1.55
Sweets, ctl.	.1.85@2.00

Vegetables.

Wholesale quotations:

Artichokes	.25@40
Beans, string, per lb.	.2@3
Beans, Lima, lb.	.2@3
Cucumbers, box	.35⅛@50
Celery, per crate	.90@1.50
Chili Peppers, per box	.25@40
Bell Peppers	.6@7
Green Corn, sk.	.75@1.25
Egg Plant, per box	.30@40
Lettuce, per crate	.4.50@5.00
Okra, box	.30@40
Peas, per lb.	.3@5
Rhubarb, box	.50@75
Summer Squash, box 25 lbs.	.50@75
Tomatoes	.35@65
Garlic	.2½@3

Onions.

Onions, sk.	.90@1.00

Citrus Fruits.

Valencias	.2.50@4.00
Grapefruit	.1.50@2.00
Lemons	.2.50@5.50
Limes	.6.00@6.50

Fresh Fruits.

Apples, box	.50@65
Apples, Gravensteins	.1.25@1.40
Apples, Bellflowers	.1.00@1.10
Bananas, Hawaiian	.75@1.25
Cantaloupes, crate	.1.75@2.00
Crabapples	.50@1.00
Muskmelons	.2.00@2.50
Nutmegs	.25@50
Figs, box single	.30@40
Grapes, seedless	.50@65
Grapes, Muscat	.40@65
Grapes, Tokays	.40@50
Grapes, wine, ton	.8.00@14.00
Huckleberries, lb.	.5@7
Pears, Winters	.50@85
Bartletts, wrapped	.1.25@2.00
Peaches	.25@40
Peaches, lugs	.90
Persimmons, box	.1.10@1.25
Nectarines, red	.40@90
Quinces, box	.50@85
Pomegranates, box	.50@65
Plums, crate	.50@75
Blackberries, chst	.6.00@7.00
Raspberries, chst	.5.00@7.00
Strawberries, chst	.3.50@5.00
Pineapples, doz.	.2.50@3.00
Watermelons, per doz.	.1.00@2.00

Dried Fruits.

1910 crop, f. o. b., carload lots, per lb.: Apples, 7@8¼c; Apricots, 11@13¼c; do, Moorparks, 13½c; Peaches, 5½@7½c, with premium of ⅛@¼c on Santa Claras, 5½@6¼c, with ½@¾c premium on 40s; Figs, 4¾@6½c for White and 4¼@4½ for Black; Pears, 9¾@13c.

RAISINS—1910 crop: London Layers, in 20-lb. bxs: 6-crown clusters, $2.25@2.50; do, 5-crown, $1.75@2.00; do 4-crown, $1.25@1.40; 3-crown layers, $1.05@1.15; do, 2-crown, 95c@$1.00. Seeded, per pkg.—Fancy, No. 16, 6@6¼c; Choice, No. 16, 5½@5¾c. Loose Muscatels in 50-lb. bxs—Standard, 4-crown, 5½@5¾; do, 3 crown, 4¾@5c; do, 2-crown, 4¼@4½c. Dried Grapes, 3@3¼c. Seedless—Muscatels, 3¾@4c; Sultanas, 4¾@5c; Thompsons, 5¼@5½c.

Nuts.

Walnuts, S. S. No. 1	.13½
Walnuts, hard shell	.13
Almonds, '10 N. P. U.	.14½
Almonds, '10 Nonp	.16½
Almonds, '10 I X L	.15½
Pecans	.14@15
Chestnuts	.14@15

Beans Dried.

Some on market say that the crop of Limas this year will be a million bag crop. Demand is brisk and market is strong.

Limas	.4.50
Pink	.6.50
Black eyes	.5.60
Small white	.3.90
Large white	.3.85
Kidneys	.6.75@7.00
Garvanzas	.3.25
Bayo	.5.50@5.75
Horse beans	.2.00
Red Mexicans	.6.00
Cranberry	.4.50@4.75

Hops

Hops, 1909 crop	.10@15
Hops, 1908 crop	.8@10

1910 contracts now being made at 12 @14 cents.

Honey.

W. W. Comb '10	.15
Dark Comb	.12½
Extracted W. W.	.8
Extracted, dark	.6½
Beeswax, per lb	.24@30

Hay.

Scott, Magner & Miller report:

Arrivals of hay during the week have been 6500 tons, or an average of over 1000 tons per day. This amount has been considerably more than enough to supply the demand, and the market has continued along in about the same overstocked condition that we have seen it in for the last three weeks.

In some sections the hay fields are becoming rapidly cleared, and it is expected that within a few weeks all of those who have hay in the fields will have been taken care of. The little rain that we have just had will tend toward this end, for the reason that those who have hay in the efilds will endeavor to market same as quickly as possible from now on.

Some round lots in the fields have been sold during the last week for immediate shipment. This has been about the only class of purchasing that has been done of late. Hay that is in store has attracted very little attention from the buyers as yet, and until the fields are cleared up, it is not thought that the stored hay will change hands to any extent at all.

Shipping demand has been fairly active of late, and quite a little hay has been moved from this market on coastwise or export account, and this outlet recently has been a great relief to the situation here.

Alfalfa hay continues to arrive in quantities, and is being taken care of steadily at current quotations. The feeling on alfalfa is decidedly firm.

We quote the wholesale prices in round lots, on today's market as follows:

Fancy wheat	.12.00@12.50
No. 1 wheat or wh and o	.9.50@10..50
No. 2 wheat or wh and o	.$8.50@9.00
Choice tame oat	.10.50@11.50
Other tame oat	.8.00@9.50
Wild oat	.7.00@9.00
Stock hay	.5.00@6.00
Alfalfa	.9.00@12.00
Straw	.40@50

Grain.

Wheat No. 1	.1.55@1.62½
Barley, good to choice	.$1.00@1.02½
Barley, poor to fair	.95@97½
Oats, white	.1.57½@1.62½
Rye, new crop	.1.65@1.70
Corn, large yellow	.1.55@1.60
Alfalfa seed	.14@15
Mustard brown	.4½
Millet	.2¾
Flaxseed	.5@5½
Broom corn seed, per ton	.23.50

Feed Stuff.

Bran, per ton	.25.00@26.00
Feed cornmeal, per ton	.36.00@37.00
Cracked corn	.36.00@37.00
Ground barley, per ton	.22.00@23.
Rolled oats, per ton	.30.00@32.
Middlings	.34.00@35.0
Oil cake, per ton	.40.00@41.5
Cocoanut cake per ton	.26.0
Mixed feed, per ton	.24.00@27.0
Shorts	.27.00@28.0

Deciduous Market

Sacramento, Sept. 17, 1910.

The following circular of the Cal fornia Fruit Distributors gives numbe of cars of deciduous fruit shipped fror all points in California for the weel (7 days) ending Friday morning, Sep tember 16th, 1910:

Peaches.

Ninety-nine and one-half ears. few Salways are still going forwar but the bulk of the movement has bee of Clings. There are very few mor of either variety available and thi coming week will probably mark th close of the season.

Pears.

Twenty-four and one-half cars. Shi ment of this variety has now reache very small proportions and there a very few left in the state.

Grapes.

Four hundred and ninety-six ar one-half cars. The grape movemei shows an increase of nearly 200 ca over last week. This consists almo entirely of Tokays, as the Malaga shi ments continue very small and wi continue to be of small volume durin the remainder of the season. Toka are showing fine size and color a are giving splendid satisfaction in markets. Movement during the comin week can be expected to be maintain at about the same volume as during t past seven days. Emperor and Co nichon grapes are showing up in goo shape and will be ready to go forwa in straight cars in about two weeks.

Weather Conditions.

Last Wednesday night and Thursd light showers of rain fell in this se tion of California. The storm was fo lowed by clearing and very favorab weather and it is not anticipated th the Tokay crop has been injured the least. The effect of the storm expected to prove beneficial rather th otherwise. Picking now going on all sections.

THE ALMOND SITUATION.

Manager Dargitz, of the Califor Almond Growers' Exchange, reports u der date of September 13 in Bulle No. 14:

It took time and attention to tablish our Inspection Bureau and st the shipping and arrange finances; this is all working nicely now. are now shipping, having shipped six cars last week and two more ready to go in a day or two. The new bleaching plants at Antelope and Fair Oaks are working nicely and those at Live Oak and at Oakley are starting. Yuba City will start up in a day or two.

Telegraphic and telephonic inquiries are very brisk in the past two or three days and we look for very encouraging business now in two or three weeks, possibly sooner, very soon after the walnut growers set their prices. In the meantime supplies are being reduced, getting into fewer hands, which always means better markets. Those who have been edging up under our umbrella are now about cleaned up and out of the way.

Citrus Market

LOS ANGELES, Sept. 21, 1910.

The orange market still promises good returns for the small amount of first-class fruit yet to go. Unfortunately many small sizes and other low grade fruit are in a less satisfactory condition. There are not more than 300 or 400 more cars to clean up before November 1 ,when new Navels are supposed to begin the new year's shipments.

Lemons are in keen demand with most satisfactory prices, but with only a few lemons to take advantage of the situation.

Shipments.

The total shipments for the season beginning November 1, 1909, aggregate 29,276 cars, of which 24,738 were oranges and 4538 were lemons. To same date last year 36,839 cars, of which 30,872 were oranges and 5967 lemons.

NEW YORK, Monday, Sept. 19.—Eleven cars sold. Market very steady on good fruit. Cloudy and cool.

VALENCIAS—	Avge.
Aurora, fy., Or., E. Peycke Co.	$3.90
Luna, ex., Or. E. Peycke Co.	3.05
Old Mission, fy., C. C. Chapman	6.65
Old Mission, ch., C. C. Chapman	5.90
Golden Eagle, sd., C. C. Chapman	3.70
Titus Ranch, fy., San Marino G. P. A.	3.70
El Toreador, sd., San Marino, G. P. A.	2.70
Gypsy Queen ef., Moulton & Green	4.20
Success, Or., F. H. Speich Co.	3.25
Security, fy., Or., Pioneer Ft. Co.	2.65
Puck, fy., Pioneer Ft. Co.	2.30
Gabriella, xc., Independent Ft. Co.	3.45
Citrus Belle, sd., Independent Ft. Co.	2.85
Signal, vf., Stewart Ft. Co.	6.20
Mayflower, fy., R. J. Richarlson	4.00
Pilgrim, R. J. Richarlson	3.70
Buena, sd., R. J. Richardson	3.65
ris, D. M. Ex.	5.85
Violet, D. M. Ex.	3.90
Jasmine, D. M. Ex	3.30
Red, C. Covina Fruit Ex.	2.75
Cougar, C. Covina Fruit Ex.	2.85
Pointer, A. C. G. Ex.	3.35
Hunter A. C. G. Ex.	2.60
Butterfly, Covina Fruit Ex.	2.80
Teal, Covina Fruit Ex.	2.55

CHICAGO, Monday, Sept. 19.—Lemons—Not really active anl running steady. Boxes, California, choice, $4.50@4.75; extra choice, $5.00@5.25; common, $3.75. Oranges—Selling fairly. The offerings are not large and the market is steady. Boxes, late Valencias, extra choice, $4.00@4.25; choice $3.25@3.50.

BOSTON, Monday, Sept. r19.—Four ars sold. Cool and cloudy. Market ctive.

VALENCIAS—	Avge.
a Mesa, Riv. Ex., Riv. Lot 1	$4.05
a Mesa, Riv. Ex., Riv.	4.45
obusta, A. H. Ex., Pachappa	4.05
rchard, Or. Nat. Og. Co.	4.10
olden Rule, Riv. Ex., Lot 1	3.60
olden Rule Riv. Ex., Lot 1	3.45
obo, A. H. Ex., Pach.	2.75
tandard, sd., Nat. Og. Co.	3.30
LEMONS—	**Avge.**
et, S. A. Ex.	$5.95
reyhound, S. A. Ex.	5.10

Grapefruit—Standard, $3.80. Halves—rchard, $3.10.

PITTSBURG, Monday, Sept. 19.—Market firm on oranges and lemons. Weather warm. Three cars sold.

VALENCIAS—	Avge.
Good Selected, Keen & Co.	$4.00
asmine, D. M. Ex. Duarte	3.40
ircus, xc., Sparr Fruit Co.	2.60
Diamond, K. Keen Co., La Mesa	3.20
aralimo, Or., Sparr Fruit Co.	3.45
LEMONS—	**Avge.**
ircus, xc., Sparr Fruit Co.	$2.75

ST. LOUIS, Monday, Sept. 19.—Weather favorable. Market firm on good ruit. One car lemons sold and one ar Valencias.

VALENCIAS—	Avge.
tork, S. A. Ex.	$3.80
ing S. A. Ex.	2.05
LEMONS—	**Avge.**
l Azar, A. C. G. Ex., Azusa	$3.65
reen Crown, A. C. G. Ex.	5.00

CINCINNATI, Monday, Sept. 19.—ool. Raining. Market steady. One r sold.

VALENCIAS—	Avge.
rafton, xf., Red, G. O. Assn	$2.90

PHILADELPHIA, Monday, Sept. 19. -One car Valencias and two cars lemns sold.

VALENCIAS—	Avge.
lue Banner, Pioneer Fruit Co.	$3.10
ride of West, Pioneer Fruit Co.	2.60
LEMONS—	**Avge.**
hittier S. T. Ex., Whittier	$5.45
ico, S. T. Ex., Whittier	4.45
opaz, xc., C. C. U.	3.10
uaker Girl, S. T. Ex., Whittier	4.50
reenleaf, S. T. Ex., Whittier	4.00

CLEVELAND, Monday, Sept. 19.—One car Valencias and one car lemons sold. Prices on lemons low on account of quality of fruit. Cool.

VALENCIAS—	Avge.
Lotus	$1.35
Salute	.80
LEMONS—	**Avge.**
Squirrel, A. H. Ex., Prenda	$3.70
Palm Tree, A. H. Ex., Prenda	2.50

DECADENCE OF THE NAVEL.

Continued from Page 269.

mobiles were pressed into service and the guests were shown all parts of the valley. Perhaps some of the orchards passed had trees that showed deterioration, but their well kept appearance would not indicate it to the passerby.

All those in charge of local arrangements did excellent work; trains were met and badges supplied to every attendant. Mr. P. J. Dreher, who acted as chairman of the local committee, was assisted by such workers as F. J. Smith, Hervey J. Nichols, Walter A. Lewis, V. V. Le Roy, E. C. Robinson, and A. A. Tait, and every other Pomona resident joined in making the visitors welcome.

Col. Firey, Mayor of the city, turned the joke on Commissioner Jeffrey neatly. A delay in the proceedings was made necessary because of the non-arrival of the stenographer from Sacramento. Wishing to crowd the full program as fast as possible, Mr. Jeffrey remarked, "Our opening proceedings will probably have little of interest, so we may proceed with them while waiting for the stenographer." Immediately he called upon Col. Firey for his address of welcome. Col. Firey responded that it lessened his embarrassment somewhat to know that special importance was not attached to his address, but nevertheless he had a most hearty welcome for everyone within the gates of Pomona.

A little amusement was created near the close of the last session because of the delay of the Los Angeles County Horticultural Commission. At the opening session reports were asked from the various county commissions. All the others responded but Los Angeles county was not prepared. All contended that there was no decadence in their counties. This was considered by the convention the natural backwardness of Californians to admit any weak point in their particular sections, and later resolutions were passed endorsing the calling of the meeting, and stating that there was abundant cause for immediate and emphatic action. After this resolution was passed, the Los Angeles Commission came in stating even more emphatically than the other commissions that their county was exempt.

Frederick Maskew, Assistant Superintendent of the Insectary at Sacramento, made an efficient secretary. In his hands will be placed the papers read and the shorthand reports of addresses and proceedings. These will be edited and later issued in book form by the state commission.

Expressions of appreciation were freely made of the work of the Whittier Pathological Station, and also of its branch, the Citrus Experiment Station at Riverside, as well as of the work done by Pomona College.

A. F. Call's extempore talk on gum disease was listened to intently. He gave many valuable points. He has proved that gum disease is in no sense contagious, merely a physical condition caused by obstruction of sap, which may be brought about at any time by pruning or injuring the roots or trunk. Redwood stakes left in contact with roots, stones obstructing free flow of sap, roots intertwining, or any similar physical condition will cause the disease. Removal of the cause, together with furrowing vertically the trunk of the tree and oiling the bark to soften it, using neat's foot oil, will give satisfactory results.

Some had thought that the orange growers exchange would use the occasion to boost for itself, but any who "feared" such a calamity were soon set at rest. The California Fruit Growers Exchange is not in a position where it needs to take advantage of any such opportunities. One point, which is merely a statement of fact in Mayor Firey's welcome, was made that in the last six years the exchange has returned to the growers $70,000,000, with but a total loss of $5000. In the Pomona district 90 per cent of the growers are in the association.

Not content with the two days convention the Claremont Pomological Club gave a "Convention Echo" at Ganesha Park on Thursday. This was the regular fall picnic of the Club. Some of the good things left over from the convention were discussed at that meeting.

One unfortunate feature was the delay of Prof. Wm. T. Horne, pathologist, from Berkeley. Missing one train, he took another, arriving just after the adjournment. He was to have discussed root rot of citrus trees.

Chas. C. Teague of Santa Paula, and Mr. John Scott of Monrovia were elected honorary chairmen, but Mr. Jeffrey was able to preside at all sessions.

That 125,000 acres of bearing citrus orchards produce 30,000 carloads is an argument for those who maintain that there is decadence in the older orange trees. This output means only 100 boxes to the acre, and 100 boxes per acre, even at the prices prevailing for the past few years, does not mean profit under California conditions.

There are $125,000,000 invested in citrus properties in California, and this great investment is well worth the interest shown in the Pomona covention.

The decadence seems to prevail more generally with navels than with any other variety of oranges. Valencias continue to bear heavily though older than many of the navels.

Horticultural Commissioner Beers of Santa Barbara county reported some orchards in his county leased to careless tenants as one cause of decadence.

Santa Barbara county has the oldest commercial lemon orchard in the state, being 38 years old.

Does the Washington navel degenerate into an Australian as it becomes older and less vigorous, was one question asked at the convention.

The man with the free fans was strictly popular.

The demand for poultry seems growing constantly. Mr. P. Cook, of the Mammoth Hatchery at 3017 South Main street, has more than doubled his yards. He has now over twenty-five salesyards, mostly in an old orchard that affords splendid shade to the fowls. Nothing is kept in closed coops. His birds all have the best of care, there are thousands of the finest birds ever grown, and it is a marvel that they are sold at such low prices. Mr. Cook reports orders from Mexico City on the south and Tacoma, Wash., on the north, as well as from Utah and all the Pacific States. Mr. Cook is willing to contract for 50,000 White Leghorn pullets at fancy prices next year. Here is an opportunity for poultry raisers. The demand is especially great for the best grade of stock. Any one that wants fine birds at reasonable prices can surely find what they want at Mr. Cook's great establishment. His incubators have a capacity of over two thousands birds every week. His plant is now enlarged and will have a capacity of nearly 100,000 eggs. His new catalogue is worth having for the poultry secrets it contains.

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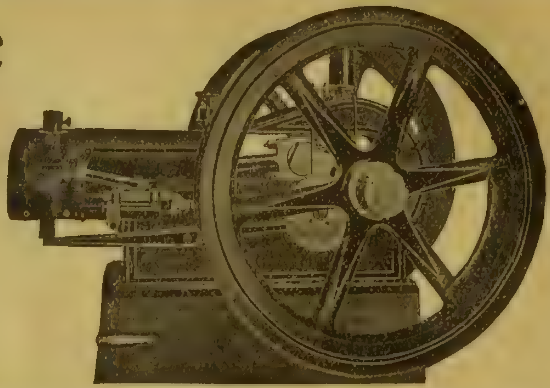

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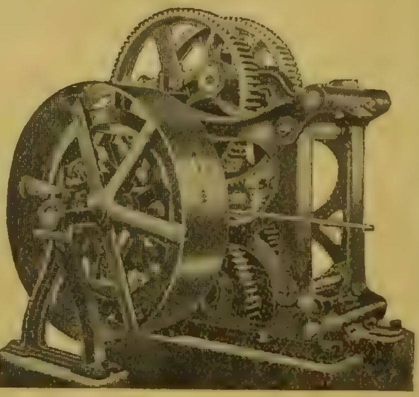

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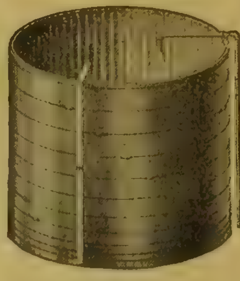

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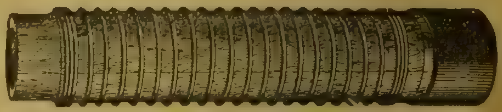

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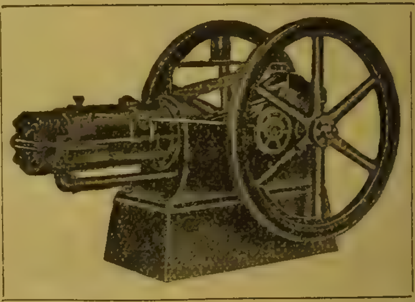

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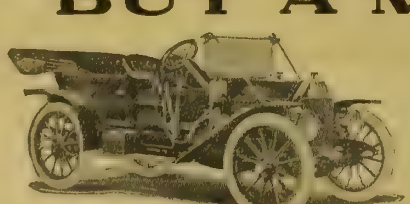

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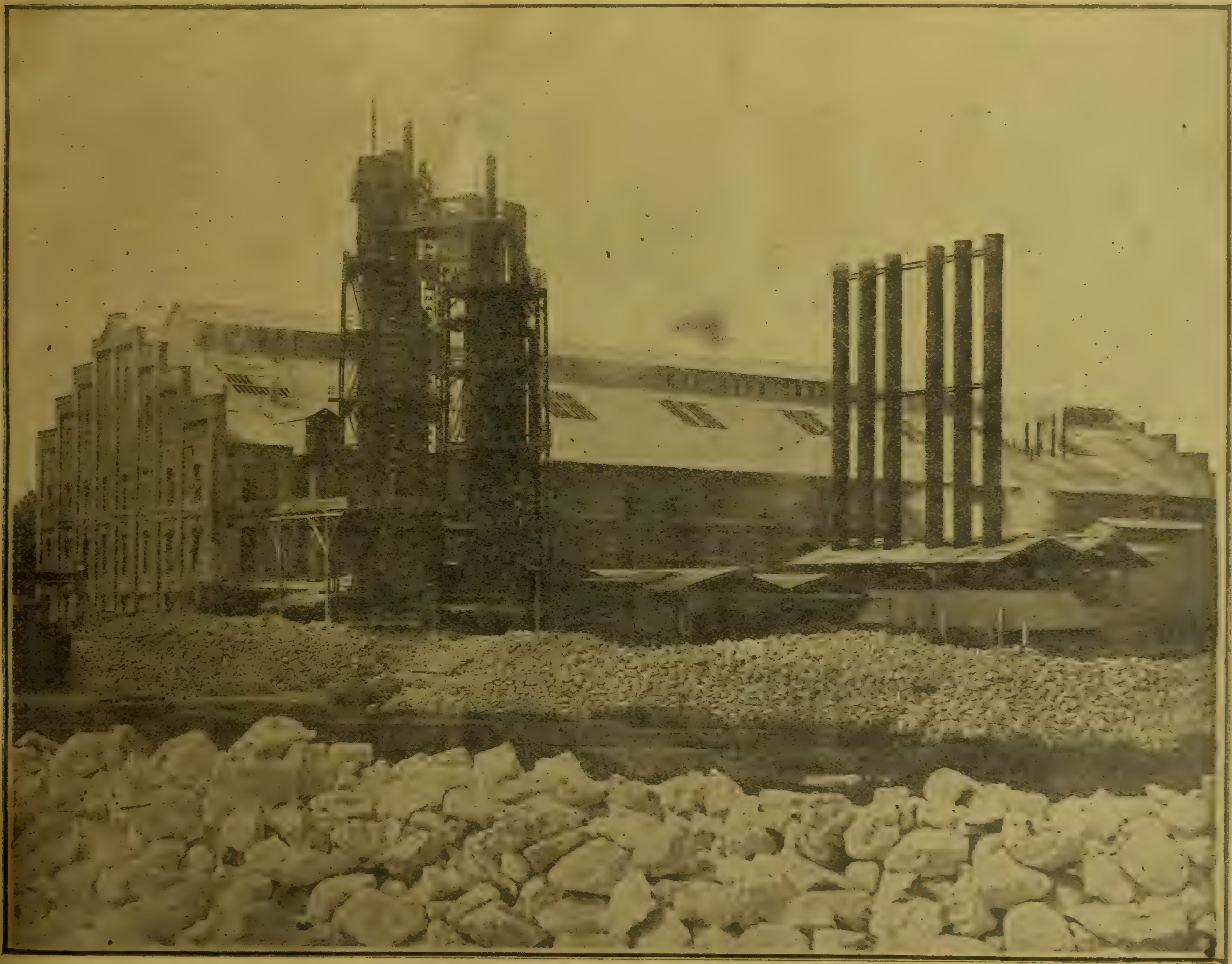

REAR VIEW OF THE GREAT SUGAR MILL AT OXNARD.

California Mills can Slice 10,000 Tons of Beets Daily

It will be but a short time till California takes first place among the states as a beet sugar producer. Colorado is still claiming that honor, but California's increase is now so rapid that Colorado's production of seven and a half millions of dollars will soon be exceeded. Ten great mills with a daily slicing capacity of 10,300 tons are now in operation and another will be built at Anaheim which will be ready for next year's output of beets.

The United States consumes annually nearly three and a half million tons of sugar, of which nearly two millions is produced in Cuba and other foreign countries. The remainder is produced in island possessions or within our own borders. In fact the United States proper produces less than 500,000 tons. The consumption is increasing faster in this country than any other, and we are now consuming about 80 pounds per capita annually. With the greatest market in the world there is no reason why we should allow other countries to be greater producers. All countries save the United States and England produce their own sugar.

The first successful beet sugar factory in the United States was the one at Alvarado, this state. There is no reason why the number of factories like the above may not well be doubled here. Profitable as it is as a manufacturing industry it also means much to agriculture. Beet growers of Europe are now paid in excess of $200,000,000 annually. All this is made possible because of the remarkable achievement of Louis Vilmorin in transforming the common beet in a sugar beet.

This engraving of the Oxnard factory gives an idea of the manufacturing end of the industry. This is the second largest in the United States, the largest being the one at Spreckles. It is a rear view of the great mill. In the foreground are piled 500 tons of lime rock ready for burning. Thousands of acres of Ventura county are making possible happy homes because this factory handles their products.

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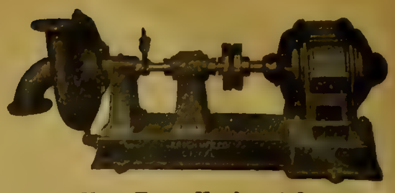

New Type Horizontal

which has been manufacturing one line of goods for over thirty years must be in a better position to furnish superior goods than one which has been in business a few months or years? The old concern has experienced engineers, superior shop facilities and, above all, a reputation and standing to maintain.

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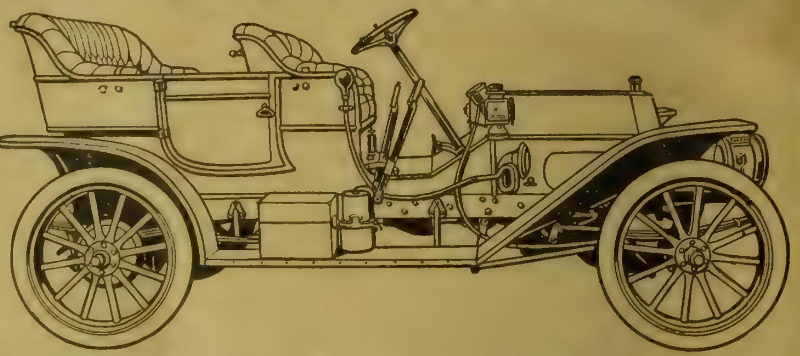

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California Cultivator

Vol. XXXV—No. 13 Los Angeles, California, Thursday, September 29, 1910 Subscription $1 a Year

World's Raisin Supply 107,000 Tons Shy

Unfavorable Climatic Conditions Militate against European Output. Good Demand and Better Prices Anticipated

by George Robertson, Statistician, Fresno County, California

Owing to unseasonable weather in Europe, there has been a general failure of fruit crops of all descriptions, and consequently an increased demand, with higher prices and strong markets; as regards raisins and currants, the following figures speak for themselves:

	Year 1909. Tons.	Year 1910. Tons.
Spanish raisin crop	30,000	20,000
California raisin crop	70,000	56,000
Smyrna Sultanas	50,000	25,000
Greek currants	185,000	127,000
Total	335,000	228,000

These are provisional estimates made by some of the best authorities, but the final results are likely to be more or less correct, and show a deficiency compared with last year of 107,000 tons.

The Australian crop has not been taken into account, as the results will not be known until early next year, aand so far as this country is concerned it is too small to be a factor in the case.

In 1891 the California raisin crop first exceeded that of Spain, and since then has kept on increasing until in some years it has been more than double the quantity produced, by what for centuries, has been the leading raisin producer of the world.

California Raisin Crop, 1910.

In response to a number of circular letters sent out to the leading growers and others in all the principal grape-growing counties of the state, it appears certain that there is a shortage of about 20 per cent in the raisin crop at the present time, compared with last year. The following remarks are taken from some of the reports received:

Kings county—Present condition of raisin crop favorable, and 15 to 20 per cent larger than last year. Wine grapes also fully as good as last year.

Madera county—As regard size of crop, Seedless will be only half a crop, other varieties normal. Wine grapes estimated at one-third more than last year. Vine hopper very bad in places.

Napa county—Wine grapes only. An increased acreage of 400 acres over last year, 8483 acres in red wine grapes, 1497 acres in white wine grapes. The crop last year was large, this year not quite so heavy; grapes of fine quality and high percentage of sugar.

Riverside county—Raisin output small. Size of crop about the same as last year; condition good. Wine grapes,—condition good, size of crop considerably better than last year.

San Bernardino county—The raisin crop will be fully up to normal.

San Diego county—In the El Cajon valley and surrounding country the condition of raisin grapes is good, but 30 per ecnt below production of last year. The berries will run small, and will show at the stemmer a rather large proportion of 2 crown. In the Escondido district the raisin crop is reported normal.

San Joaquin county—Wine grapes only; condition fair to good, but lighter crop than last year.

Yolo county—Fair crop of Sultanas and Thompsons, Muscats small berries, crop probably 15 to 20 per cent short . A lively trade with San Francisco is developing, taking daily shipments of Thompsons and Muscats for table grapes, hence raisins are becoming less from year to year.

A YOUNG RAISIN VINEYARD IN SAN JOAQUIN VALLEY.

Fresno county—As is well known, Fresno is the center of the raisin-producing district of California, and on an average produces about three-fourths of the total crop. The majority of the reports this season are unfavorable, and estimates vary, the shortage compared with last year being variously estimated at from 10 to 25 per cent, some estimates as high as 30 per cent.

All these reports were made within the last two weeks, and before the recent rains, which cannot fail to influence the situation. Weather conditions are now in control, so that it is impossible to state with any accuracy what the total shortage will be when the crop has been secured.

A number of correspondents in some counties have requested more time before sending in their reports, but sufficient data has been received to enable the general conditions to be ascertained. It is not for me to prophesy what prices are likely to be; by duties end when I present facts and figures, and it remains for those who take the trouble to read and study these statistics to draw their own conclusions.

The Raisin Crop of the World.

	Spanish Tons.	California Tons.
1904	25,000	40,000
1905	28,200	37,000
1906	15,800	45,000
1907	27,000	70,000
1908	25,000	65,000
1909	30,000	70,000
1910 (estimated)	20,000	56,000

In previous years the California crop was 47,000 tons in 1900, 37,000 tons in 1901, 63,000 tons in 1902, and 60,000 tons in 1903.

	Smyrna Sultanas Tons.	Greek Currants Tons.
1904	34,100	151,000
1905	58,300	160,000
1906	27,500	135,000
1907	47,000	156,000
1908	45,000	185,000
1909	50,000	185,000
1910 (estimated)	25,000	127,000

Australian Crops.

In addition to the above, raisins and currants are now produced in Australia in the following quantities:

Raisins

Season.	Victoria. Pounds	S. Australia Pounds
1901-2	3,085,665	822,080
1902-3	3,979,798	1,294,944
1903-4	5,986,060	1,463,056
1904-5	3,393,117	974,064
1905-6	4,813,240	1,334,928
1906-7	10,990,224	1,805,776
1907-8	7,685,104	2,742,656
1908-9	7,688,032	3,136,784
1909-10	Not yet issued.	

Currants

Season	Vitcoria	S. Australia
1901-2	285,157	382,256
1902-3	416,890	547,232
1903-4	838,955	1,165,472
1904-5	669,108	1,423,968
1905-6	717,156	1,629,824
1906-7	1,313,760	1,608,432
1907-8	1,169,280	2,235,184
1908-9	1,336,048	2,738,288
1909-10	Not yet issued.	

In New South Wales, Queensland and Western Australia also, small quantities of raisins and currants are also produced.

Cape Colony, in South Africa, also produces a small crop of raisins, but only a few million pounds.

California Seedless Raisins.

The exact proportion of Seedless, compared with Muscat raisins has never been determined, but in 1903, when the California Raisin Growers' Association claimed to hold 90 per cent of the crop, out of 97,011,106 pounds delivered to them, 6,314,271 pounds were seedless, viz.,—Thompson, 1,484,214 pounds, and 4,830,057 pounds of Sultanas.

Prices in Recent Years.

Unfortunately, no regular record of the price of raisins and other fruits has been kept from year to year, as they would be very valuable for comparison.

Deliveries to Growers' Association.

	Sweatbox Weights
Year.	Tons.
1898	32,948
1899	26,874
1900	36,263
1901	27,026
1902	42,584
Average for first five years	33,049
1903	48,497
1903 in excess of average for first five years	15,448

Average Net Per Ton for All Grades.

	(Sweatbox)
Year.	Per Ton.
1898	$54
1899	86
1900	76
1901	60
1902	76
1903	48

The net average for the six years of the existence of the Association was $66.66 per ton to the growers for all grades, including damaged stock sold to wineries.

Cash Paid to Association Growers.

Year.	
1898	$1,302,739.42
1899	2.019.298.32
1900	2,672,784.12
1901	1,648,178.12
1902	3,103,101.78
Average for first five years	2,149,220.53
1903	2,240,415.90

In 1905 the California Raisin Growers' Company paid the growers who delivered raisins to the company, $1,205,546.00, or an average price of 3 cents in the sweat box.

Since 1905 the general sweatbox price per pound has been as follows.

Year.	Highest. Cents.	Lowest. Cents.
1906	6	2
1907	6	1¾
1908	4	1¾
1909	2¾	1¾
1910, Jan. to Sept.	3½	2¼

In 1906 prices touched 7 cents in a few cases; in 1907 prices opened good but fell owing to the financial panic. These quotations do not refer to prices paid under contract for a number of years, or to special deals.

Continued on page 311.

Citrus and Tropical Fruits

FUMIGATION.

THE state experiment station has been interested in the fumigation problem from the beginning and, while no special funds have ever been available for a thorough investigation of the problem, yet considerable work has been done and several publications issued on the subject. In these bulletins are to be found the source of several phases of the problem that have been more recently put to practical use, including the marking of tents, the calculation of dosage and the basis for this calculation.

During the past three years the federal Bureau of Entomology has had an agent here in the field, investigating the problem largely from the practical field side. Mr. Woglum has done some very good work in the establishing of dosage schedules for the different scale insects, based upon field conditions; his campaign for accurate measurement as against guess work, and his investigation of sodium cyanide and new tenting materials are of great value to the citrus industry. I have kept in touch with Mr. Woglum's work from the beginning and shall feel free to draw upon his data. In spite of all of this work done on fumigation, and I have not mentioned what many practical fumigators have added to our knowledge of the subject, much yet remains to be investigated.

Variation of Dosage.

Seven or eight years ago the experiment station had a man in the field for the purpose of determining the actual practice of scheduling dosage. Practically all of the fumigating outfits then operating in the state were visited and the tented trees accurately measured and the doses given them by the scheduler recorded. Thus the dosage and measurements of over 2,000 trees were made, representing the actual practice of 30 fumigators.

From this study it was found that for a 10 foot tree, having the two dimensions approximately equal, the dosage varied from 2 to 7½ ounces. And for a 20 foot tree the variation was from 7 to 32 ounces. This certainly is evidence enough without further argument in favor of some system of measurement or accurate calculation of dosage as against the old system of guessing.

Factors in Variation of Dosage.

Now there are three factors that account for the great variation of dosage. First, there is the inaccuracy of judging the exact size of the tree, and the consequent dosage. Second, there is the difference of opinion of different fumigators as to the dose a particular sized tree infested with a particular scale should have. For example, take a tree infested with red scale that measures 20 feet over the top and 30 feet around the base; one man will say it should have 4 ounces, another 5, another 6 and another 8. Thus there may be a variation of 50 per cent for the same tree infested with the same insect. Third, there is the variation in dose as the size of the tree varies. For example, we will assume that all fumigators agree on, say, six ounces as the proper dose for a tree 20x30 feet. Then for a tree twice that size the same people will vary their dose from 10 to 30 ounces. This is a difference in basis of calculation, or variation as the size of the tree increases or diminishes.

The first two of these factors are easily remedied. The exact size of the tree can be ascertained by some system of measurement; and there should be a general agreement as to how much cyanide is necessary to kill the different scales. But the third factor, namely, varying the dosage properly according to the size of the tree is a more difficult and complicated question.

Basis for Dosage.

The first dosage schedule published was based upon the cubic contents. This, naturally, would be the logical basis for calculation. But in actual practice it was soon found that a large tree required a dose proportionately less than a smaller tree. This is accounted for through the leakage of gas, and a small tree has more tent surface per unit of volume than a larger tree. So, many widely different schedules were proposed until finally actual field practice established a more or less elastic schedule with the approximate proper variation in dosage according to the size of the tree.

Area Basis.

This has worked out into practically an area basis rather than a volume basis, that is, trees receive a dose according to the area of their tent surface rather than the cubic content of the tented tree. This basis of dosing a tree according to the tent surface was proposed by the experiment station in 1903, and is the one adopted by Mr. Woglum.

Tables and Calculation.

Instead of elaborately figuring out a dosage table by first calculating the cubic contents, and then allowing for the variation in leakage of gas with the different sized trees, as Mr. Woglum has done, the following is a very simple formula by means of which any one can construct his own table. This formula is simply to multiply the circumference of the tented tree by the distance over the top and point off two places. The result is the number of ounces of cyanide for the given tree for the purple scale.

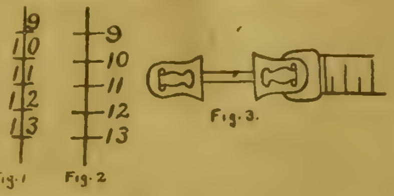

Fig. 1. Original design for making fumigation tents. Fig. 2. Design generally used in California. Fig. 3. "Washburn" clamp attached to end of tape for attaching tape to tent at any point.

Examples—A tree 20x30, 6 ounces cyanide; a tree 30x40, 12 ounces cyanide.

This, as I have stated, is the schedule for the purple scale and corresponds in general with Mr. Woglum's table. Now for the red and yellow scales, or for the black scale, excepting where it is full grown, reduce this schedule by one-fourth.

Examples—A tree 20x30, 6 ounces for purple, 4.5 for red; a tree 30x40, 12 ounces for purple, 9.0 for red.

Chemicals and Formula.

As to the chemicals little need be said except that the acid should indicate 66 degrees Beaume or 93 per cent pure, and be free from nitric acid which may cause burning. The potassium should be of 98-99 per cent purity and be free from sodium chloride which, if present, will decompose a part of the gas.

Sodium Cyanide.

Mr. Woglum has demonstrated that sodium cyanide is equally as satisfactory as the potassium, both in generating properties and efficiency in killing the scale; and since it will be apparently cheaper than the potassium it seems probable that it will sooner or later come into very general use. Heretofore, the experience with sodium cyanide has not been satisfactory for the reason chiefly, that the product was not pure enough. What has been passing for 98 to 100 per cent sodium cyanide has been a 98 to 100 per cent purity in terms of potassium cyanide, whereas if we accept potassium as a basis of purity, the sodium cyanide should be 126 to 133 per cent pure. It is unfortunate that this above-a-hundred per cent purity should have got started, but since we are accustomed to potassium as a standard possibly it is justifiable. Anyway, all we need to know is that a pound of chemically pure sodium cyanide contains about one-third more cyanide or cyan-

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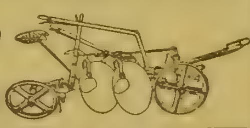
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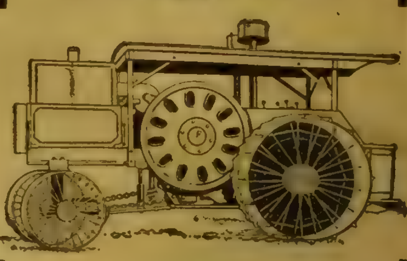
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ogen than the potassium and will thus produce more gas.

Formula for Sodium Cyanide.

Since there is more cyanide or cyanogen in a pound of sodium cyanide than in a pound of potassium cyanide, it will require a proportionately greater amount of acid. One of the uses of water in the generation of hydrocyanic acid gas is to dissolve the residual sulphate, and thus prevent it from coating the cyanide not yet generated or reached by the acid. In the case of sodium cyanide there is approximately one-third less of the sulphate formed, and consequently the water may be reduced about one-third.

Therefore, the proportions of cyanide, acid and water will differ in case sodium cyanide is used, and the formula that has been found to be satisfactory is:

Sodium Cyanide....1 part by weight
Acid ....1½ parts by volume
Water ....2 parts by volume

It should be noted that in case sodium cyanide is used all dosage tables should be reduced one-fourth.

Adulterants.

The commonest adulterant of cyanides is sodium chloride or common salt, and this is likely to get into sodium cyanide, particularly, in large amounts. The presence of this salt produces a reaction in which hydrochloric acid is formed and this acts in turn directly upon the hydrocyanic acid gas, thus decomposing it. In order to avoid this adulterant a high degree of purity should be insisted upon, and this stated in terms of the potassium salt should be 124 to 133 per cent pure.

Comparative Cost of Sodium and Potassium Cyanide.

A good sodium cyanide can be bought for 27 or 28 cents per pound as against potassium at about 25 cents. It requires a little more acid for the sodium so that the acid bill is higher and the cost per pound of cyanide is higher. But since one pound of the sodium will generate as much as one and a quarter pounds of the potassium, the cost is really in favor of the sodium cyanide, and this, if calculated out, will be found to amount to from 1½ to 3½ cents per pound.

Tighter Tenting Material.

One of the greatest losses in any commercial operation that I know of is the loss of gas through poor tenting material. This loss amounts every year to thousands of dollars, and it is surprising that the resourceful people of Southern California have tolerated it so long. I am well aware of many attempts to prevent leakage of gas through treatment of tents and so on, but even simply a little correspondence with the manufacturers of ducks and drills has brought out a tent that is infinitely tighter than anything heretofore on the market; and Mr. Woglum estimates that such tents will require only about one-quarter as much cyanide as the older materials. I believe that we ought to do still better than this, but a reduction of one-quarter in the amount of cyanide will mean a saving of more than $100,000 each year. Probably there is no insect any harder to kill than the mealy bug, and in some cases double doses and double tents have failed to kill them, yet in an absolutely tight box with an ordinary dosage I have been able to kill all stages, including the eggs, in only ten minutes exposure.

To summarize I would advocate: The measurement of tents or other means of accurately calculating the dosage, the use of sodium cyanide, providing those making the change from the potassium thoroughly understand all the points incident to that change, and, finally, in the purchasing of tenting to get the tightest possible material, for even then there is still too great a leakage of gas.

C. C. Chapman, one of the big and leading citrus growers of the state, whose home is at Fullerton, wife and daughter, and son-in-law, Dr. Wm. Wickett, returned recently from a thirteen weeks' tour of Europe, during which time they visited horticultural points of interest in France, Italy and other parts of Europe.

THE OLIVE CROP FOR 1910.

The Fresno Republican says that with the olive crop in Europe practically nil, and with a very large shortage in this state, high prices to growers are being paid there, though the crop is almost cleaned up from first hands, and record prices are expected for pickled olives and olive oil this season. Growers are being paid $40 per ton for oil olives and $80 per ton for pickle goods. This is an average of $5 and $10 per ton more than is paid in the average good year. In fact, with better figures paid for certain desirable blocks of goods, this makes something like a high record for olive prices to growers in this state.

The crop in this section of California is from one-third to one-half short of the average. In Southern California the shortage is figured at a third. In the northern part of the state there are practically no olives.

Authoritative advices from Spain state that the crop there is 97 per cent short, which means there is practically no crop.

There has been much buying here by olive product manufacturers, and it is stated that there is very little crop left to be bought up.

The price of case goods has advanced from $2.25 to $2.50, but this is believed to be only the beginning of a very sharp and extensive advance in values. In fact, with spot stocks very light, in Fresno and Los Angeles, it is believed the pinch of the shortage will be felt in about two months, and things are then expected to take an upward swoop.

The rains of a few days ago developed the fruit here to a considerable extent, and picking will begin right away. The process of making oil and pickles will start immediately thereafter.

OLIVE CROP SHORT IN SPAIN.

Latest reports from Andalusia are to the effect that this year's crop of olives will be one of the poorest on record, due to the circumstances mentioned below. The weather conditions this year have not conduced to the development of the olives, bitterly cold weather having been experienced quite late in the spring, which destroyed large numbers of the small olives. Further, the lack of sufficient rain when neecssary and the continuation of the hot dry summer weather has destroyed all hope that the small number of olives still surviving will come to perfection. It is estimated that the crop of Queens will be practically nil, that of Manzanillas poor in quantity, quality, and size, and that of the oil-producing olives also poor. Owing to the abnormally large crop of last year and the large stock on hand, the dealers do not anticipate any shortage, though it is possible that prices will be higher next year than at present.

Advices coming to The Cultivator from Limona, Florida, are to the effect that the coming crop will be very light. This in view of the fact that the California crop just at this writing gives promise of being unusually heavy, assures a good market at fair prices the coming season. Somehow or other Nature is after all a great leveler in her dispensations. If crops were bounteous and good everywhere all the time, there would be no good prices, and the element of chance so far removed as to cause the game of fruit growing and selling to become tame. The following paragraphs show present prevailing conditions in Florida:

At Ft. Myers—crops are not as good as last year, only a fair crop of both oranges and grapefruit is assured.

At a recent meeting of the growers at Bartow, it seemed to be the general opinion that not over one-fourth of a crop would be harvested. Homeland will probably have one-third, while Winter Haven's crop will come nearly up to last season.

The orange and grape fruit crops at White City owing to the drought, will not average over 60 per cent. The fruit is growing well, and most of it looking fine.

Like the rest of the counties in the orange belt, Volusia will not market over a half or two-thirds of a crop the coming season.

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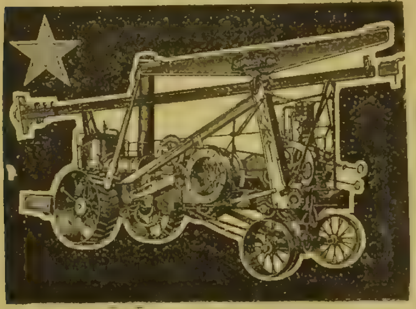

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MORGANHILL, CAL.

New catalogue ready

In poultry raising the breed is important, but the man or woman behind the breed is more so.

Tree and Shrub Fruits

A DECIDEDLY POPULAR BERRY.

Among fruits of California introduction not one has won a stronger following than the Loganberry. Its importance to commercial horticulture is indicated in the fact that the Sebastopol Berry Growers' Association has alone marketed 183 tons; this is probably the largest output from any one district, hence the aggregate crop of the entire state must have been in excess of any other bush fruit, with possibly the exception of the different varieties of blackberries as a whole. The reason for this popularity is that the vines are heavy croppers, the fruit is a good shipper; and finally, that it possesses a fine flavor, both in the fresh state and also when made into pies and sauces.

THE LOGANBERRY: A CALIFORNIA FAVORITE.

Touching its history, we quote from "California Fruits and How to Grow Them:" "The Loganberry was originated by Judge J. H. Logan, of Santa Cruz, and is a cross between the California wild blackberry and a red raspberry, thought to be the red Antwerp. It was a chance hybrid developed by growing plants from the seed of the wild blackberry in 1881. The plant was multiplied by its originator and fruited for more than ten years, plants being meantime given to Mr. James Waters, of Watsonville, who grew it on a commercial scale and was gratified at the results of his marketing of the fruit. The variety was first given to the public through the University of California in 1893 and has since then been propagated by nurserymen and sold in large quantities. It has proved a most valuable fruit in all parts of California, and has commanded the attention of pomologists and growers all over the world. The Loganberry is an exceedingly robust grower, and has unique foliage and cane growth as well as fruit. The fruit is strikingly large and handsome; sometimes an inch and a quarter long, with the shape of a blackberry, and sometimes the hue of a dark red raspberry. Its flavor is unique and peculiar, and gives to many tastes suggestions of the combination of blackberry and raspberry flavors. The culture of the Loganberry is like that of the dewberry—both in growth and propagation, rooting readily from cane tips without covering, unless many plants are desired and then a covered cane will root at each joint."

APPLES PAY.

It used to be acknowledged, even by the natives, that much of California could not produce apples that would be commercially a success; however, some exceptions have lately been noted; the Belleflower and the Winter Permain have won for themselves a place, and are now acknowledged as very remunerative. The Gravenstein has also been mentioned as an apple that is able to lift a mortgage.

As yet I have not seen any mention of the Rhode Island Greening. That apple is, as is well known, the equal of all apples as a sauce and pie maker. I have two trees on my place at Burbank, Los Angeles county, just at the foot of Mt. Verdugo. The elevation is about 800 feet, soil decomposed granite or ideal orange land. Seven years ago when I bought the place these trees that are now not less than thirty years old, were all but dead, the sap suckers had so drilled them that it was hard to find a place as large as the end of one's finger that had not a hole in it. I tied up the trunks and large branches, shot as many of the vermin as I could and saved the trees. The trees have had no special care, and as far as I know have never been fertilized. This year I sold forty boxes from those trees at sixty cents a box or two cents a pound, netting twelve dollars to the tree. The apples were large and of fine quality and were in great demand. I am convinced that with proper cultivation of apples when the right apple is planted and given as much care as

Plows

You don't buy a plow for speculation—you want it to dig dollars out of the ground with it.

A good plow means good work; good work means more dollars.

No one ever heard of a better plow than the Deere—because there is no better plow.

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Deere plows do not "drag" the horses. They pull light because they are shaped right—easily handled because made right—outlast others because the best materials that can be put into a plow go into the Deere.

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With the world-famous Kramer Rotary Harrow Attachment. Awarded Gold Medal and Diploma at A. Y. P. Exposition, Seattle. Also Diploma by Dry Farming Congress Convention. First on the market. All others are imitators. Over 50,000 sold.

The Kramer Attachment is recommended by the leading Departments of Agriculture, and is so light-running that your team will never notice the additional draft. Can be attached to any gang or sulky plow. Mulches the ground to any depth and produces the Ideal Seed Bed. Combines all the functions of Harrow, Packer and Pulverizer.

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THE SILVA-BERGTHOLDT CO. NEWCASTLE, CAL.

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180 Orchard Street Newcastle, Cal.

Skim-milk is thin looking stuff, but it may be put to good use in the poultry yard.

oranges, that the returns will be at least as large as from the best orange grove, and in the hands of the average man will far outstrip oranges. They will do with far less fertilization. One irrigation a year or at most two is sufficient. Less skill is needed in growing and marketing the crop.

The Greening bears a crop every year and with me so far an increased one each time. Still I do not expect quite as large a crop next year. I would advise those whose oranges do not bring satisfactory returns to plant apples.—J. C. Oestergard.

SPRAY INJURY.

In a report recently made by Horticultural Commissioner W. H. Volck of Santa Cruz county, he refers to serious injury to apples affected by the use of a form of arsenate which has lowered the grade in many orchards. Mr. Volck says:

"By far the most serious matter of interest to the fruit grower is the arsenical injury which has developed in a considerable number of orchards which were sprayed with an imported brand of arsenate of lead known as Sherwin-Williams (new process) arsenate of lead. In many cases this spray injury has been so serious as to reduce the value of the crop all the way from 5 to 20 per cent and in addition jeopardize the next year's crop by weakening the fruit buds. A conservative estimate of the damage over the entire valley and elsewhere in Santa Cruz county is about $150,000. This damage was done by a carload of arsenate of lead, the total retail value of which at 12 cents a pound is $3600.

"My report for July, 1910, contained a statement of the chemical and foliage tests which eight had previously made of this arsenate of lead, and that the sample had been found too injurious for me to recommend its use in the Pajaro valley or other districts having a similar climate. The cause of the injurious action of this and many other brands of arsenate of lead is that too much arsenic is present to properly combine with the lead in the insoluble or ortho-form. Also the process of manufacture of a well-known brand has not been suhc as to insure that any of the arsenic is gradually soluble in water, especially when exposed to the action of the air. The fogs and dews so abundant in the Monterey bay cliamte expose any material applied to the leaves of trees, in this district, to long continued action of water and air. As fast as the arsenic is dissolved it is taken up by the leaves through the pores and any abrasion of the skin which may exist. Once inside the leaves the arsenic begins to poison and kill the cells. and the amount of injury depends on the quantity of poison taken up and natural strength and resistance of the leaves.

"The condition just mentioned makes it possible for the same spray-material to produce very widely different degrees of injury in different orchards or on different varieties. In order to spray with safety under the climatic conditions of the Pajaro Valley the arsenical must be such that it will stand the test on the most delicate foliage and under the most exacting conditions."

WALNUT CROP IN FRANCE.

From Vice Council Murton located at Grenoble, France, we have information that the weather condition in the French walnut growing districts have been such that the crop of nuts and of fruits will be very light. All standing crops have suffered more or less from the effects of this abnormal situation, fruit especially, which is rare and dear in consequence. As an example, cherries which last year retailed at 2 to 3 cents per pound have sold this year for 6 to 12 cents. The same proportions exist for all other kinds of garden or orchard fruit.

"The outlook for the forthcoming yield of walnuts is not encouraging. The cold and frosts of early spring, just when the fruit was budding, killed large quantities of all varieties of nuts and retarded the development of those that survived. But the trees have since recovered and look prosperous and green, while the nuts remaining appear to be well formed and fairly large. However, for the proper maturing of the fruit warmth and sunshine are essential up to harvesting time, which should be, as usual, about October 15.

"The crop of 'Mayettes,' or table nuts, is variously estimated at 8,000 to 12,000 bales of 100 kilos each (100 Kilos = 220.46 pounds). From personal inspection of the region I am inclined to believe that the latter figures will be fully realized. However, the yield will probably not much exceed a third of a good average crop. The same is true of 'Chabertes,' or small nuts, used in the United States exclusively for confectionery purposes, of which it is expected that not more than 12,000 to 15,000 cases of 25 kilos each will be available for exportation, as against 30,000 to 35,000 cases last year.

"In consequence of this shortage it is generally believed that this year opening prices will rule high. In the meantime it does not appear that any contracts have yet been made for forward delivery, both buyers and sellers holding aloof from the market."

Many of the ranchers in the Yuma (Arizona) valley have cut and stacked their second crop of alfalfa seed and are now patiently awaiting the thresher for the second time.

NITROGEN.

According to Dr. Edward B. Voorhees, the present annual consumption of fertilizers, as near as can be estimated, is 5,000,000 tons; which at $29 per ton makes a total of $145,000,000. On a basis of 3 per cent ammonia, 8 per cent available phosphoric acid, and 5 per cent potash this would be divided as follows: Nitrogen, 48 per cent or $69,600,000; phosphoric acid 32 per cent or $46,400,000; potash 20 per cent or $29,000,000.

Taking as a basis the experience of the New Jersey Experiment Station found in actual field tests extending over ten years, it was proved that on account of the greater availability and lower cost of nitrogen in nitrate of soda as compared with the best form of organic nitrogen—namely, dried blood—had all of the nitrogen used in the state the previous year been applied as nitrate of soda, there would have been a saving of $383,900 to the state. Then on this basis the whole country could have saved $17,000,000 in the year in this way.

All this too was on the basis of the best form of organic nitrogen, while as a matter of fact much of the lower grades and more difficultly available forms are used.—R. R. Snowden, Chemist and Soil Engineer.

But it must be remembered that in fact, if not in theory, nitrogen from organic sources with its increased bacterial activities gives an advantage which a chemical fertilizer cannot. The action of nitrification sets free certain organic acids which have power to dissolve more or less additional plant food. Chemical content of a soil is by no means an indication of its productivity. There are many factors which must be considered in soil fertility.

It will soon be time to consider the necessity of spraying peach and plum trees, and the grower who is casting about for effective spray material will do well to investigate the worth of the Rex Spray. This spray is not one of the catch penny affairs, but is simply a commercial solution of the lime-sulphur so compounded as to be almost perfect in its action. The Rex people have put this material on the market for several years and its popularity is constantly increasing. The same company also puts out an arsenate of lead and a sulphide of arsenic regarding which it will send particulars

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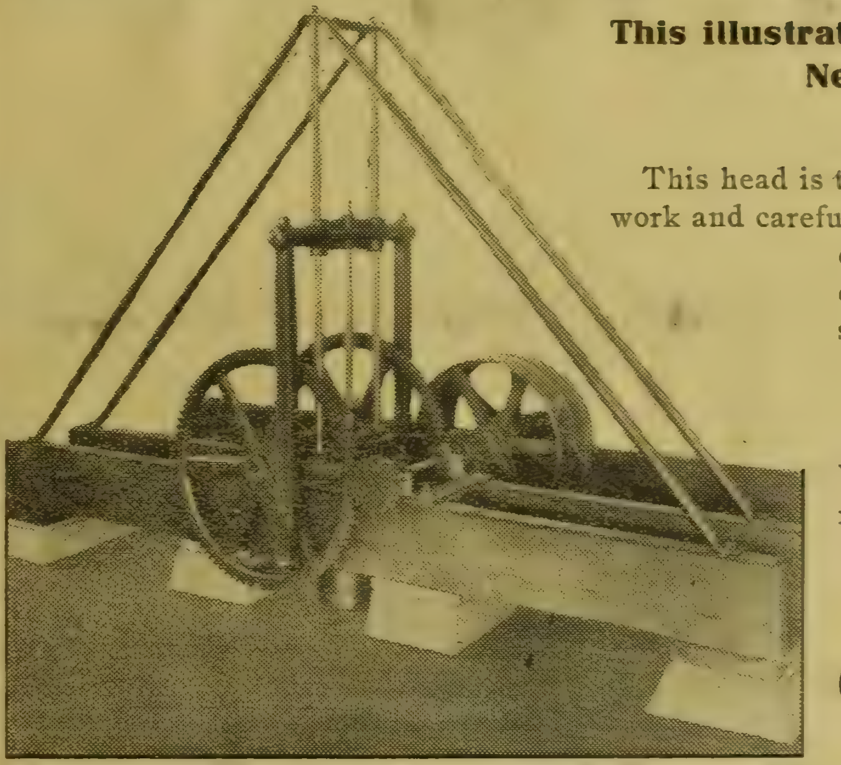

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Made in Sizes from 5 to 25 H. P.

Write for circular and full information.

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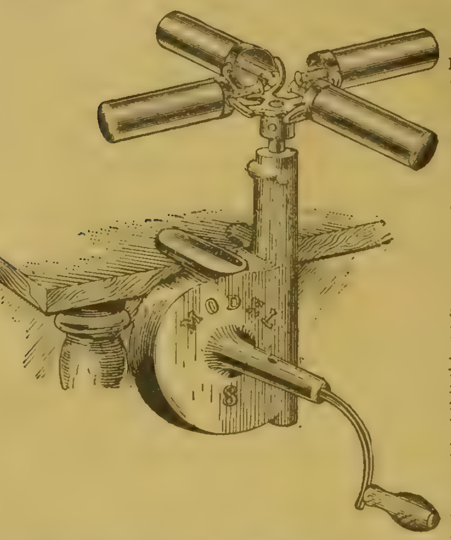

Improved Babcock Tester

Babcock's Milk Tester, an extremely simple, light, compact and carefully designed apparatus, especially adapted for use in the dairy and also on account of its light weight to the Traveling Dairy Inspector.

The working parts are entirely enclosed in a handsome cast-iron case, and consist of but two cut gears, namely, bronze spiral gear and steel spindle with worm thread.

The Tester is fitted with swinging pockets and malleable iron head; it turns very easily without any vibration or jar and can be readily attached for operation to any table or bench. The bottles are perfectly horizontal when rotating.

	Wt.	lbs.
No. 1, 2 bottle for milk	14 each	$5.00
No. 2, 4 bottle for milk	14 each	6.00
No. 3, 2 bottle for milk,		
No. 4, 4 bottle for milk, and cream	14 each	5.50
No. 4 4 bottle for milk, and cream	15 each	7.00

Prices include full directions for making test, bottle of acid, test bottle brush, acid measure, pipette and test bottles.

Creamery Machinery and Dairy Supplies

O. J. Weber Co.

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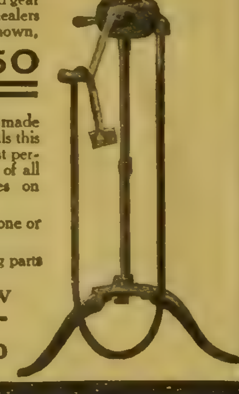

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We can supply you with any size and quantity of **Standard** Pipe or Casing—all new threads and couplings—all stock guaranteed first class. Write for Prices and Particulars.

Live Stock and Dairy

Dairymen and stockmen are requested to write of their experience. Mrs. Sherman is always willing to answer queries and this, with experience of other workers, will make this department of greater value.

CALF DISEASES.

By Mrs. M. E. Sherman.

A disgusting disease in calves is Verminous Bronchitis, or as it is more commonly called worms in the lungs. The trouble is not widespread in the state and with ordinary care in inspecting calves at shipping points is not to be greatly feared. A few years ago a number of calves were brought into Fresno that were affected with this trouble. It was, however, quickly stamped out in the one season by the county officers. The trouble is easily discovered and unmistakable that there is little danger of its being overlooked.

Symptoms.

The calves cough and choke, raising masses of frothy mucus, that they deposit in great piles on the ground. When this mucus is closely examined it is found to be full of tiny white thread-like masses, sometimes these twist up into little balls. If a small portion of this mucus when first expelled, is floated in a basin of warm water these little threads are seen full of life as they move around. These worms are living and moving in the lungs of the calf. The trouble is very infectious and is taken by the calves from the ground rather than from each other. The way it was stamped out in this county was by not allowing any other stock placed in the infected fields, limiting the disease to those that already were infected. Prof. Laws treatment by having the calves inhale sulphur fumes proved valuable. The calf is placed in a closed box and a small piece of sulphur rag is burned. All the calf can stand without choking is used. Then the box is opened and the calf is allowed to breathe fresh air for ten minutes. Then the treatment is repeated; about five treatments are enough at one time, they may be repeated after two days if the first was not sufficient. Sulphur rag is prepared by dipping strips of clean old muslin into melted sulphur and then hanging them out to dry. A piece ten inches long and four wide makes plenty for one burning.

Chloroform.

The other successful treatment is by using chloroform. At first this was used by making an opening in the side of the throat and putting in the chloroform fumes directly into contact with the worms. This operation was costly and many of the calves died from want of proper nursing after the worms had been destroyed. The very bad cases were sure to die from weakness and those not too weak could stand the simpler way of using chloroform. I think, today, the following is almost the universal way of treatment. The calf is held securely and a tablespoonful of chloroform is poured on a piece of absorbent cotton. It is then held firmly to one nostril. One only, remember. A piece of cheese cloth is held over the cotton to prevent evaporation while the animal inhales it into the lungs as a vapor. The treatment should take place every day for four days and then the calves watched for any returning of the trouble. They frequently reinfect themselves from the pasture. As soon as all the animals are found to be well, they should have another pasture field. The pasture they come from, should be abandoned as a place for cattle. When the season comes around it may be plowed up and a crop that is cultivated put on it. At least two seasons of rain and sun should purify it before it is again used for animals.

Mange.

There are many calves that are thin and poor looking from attacks of mange. It is really more of a calf trouble and disappears after the animals are two years of age. Mange is a fungus or vegetable organism that lives on the surface of the skin. It buries itself under a crust that must be removed if the treatment is to be successful. Mange produces intense itching and the calves affected seem to be in constant discomfort, they keep moving all the time from place to place to secure a little ease. The surface of the skin is covered with small white pustules or pimples that break, allowing a thick tough mucus substance to escape. White looking crusts form more like a scurfy dandruff, that sheds off from time to time. The trouble is very contagious and must be handled promptly if the calves are to be kept growing thriftily. The trouble is not hard to cure if the medicine can be gotten on to the trouble. The thick crusts are very repellant and must be removed completely. A pound of good strong laundry soap is put into a gallon of water and placed on the stove, when it has melted down into a jelly, half a tablespoonful of strong carbolic acid is stirred in. The calf must be tied up well and then the soap daubed on over every spot of mange. The soap should be left on until dry, then soak it off with very warm water and usually the scurf will come off with the soap. Clip any hair that comes up close to the mange spots as they may conceal a little spot that will again start the trouble. After the spots are clean, wipe them dry with a piece of absorbent cotton and paint the surface with the following mixture.... Three ounces of hyposulphite of soda, one ounce of dilute sulphuric acid, fifteen ounces of water, put it on well and let it dry on. Repeat the mixture every day and if scurf appears wash again with soap. Usually a week of treatment will heal the places.

Ringworm is a common disease and will yield to the same treatment. This appears on the heads usually, and is round in appearance. Sometimes, however, ringworm is very stubborn and then after using the mange treatment for a week, follow the case up by painting the spots with tincture of iodine for a week longer. It must be also remembered that these two troubles induce much rubbing and scratching. The trees, calf high, and the fences should be whitewashed to kill any of the infection that may remain. The stables and stalls where any disease has been should always be well whitewashed to make it all sanitary.

Lice.

In springtime these pests thrive best and are forced on the notice by the bare looking places that appear on the cows and calves rumps. The back of the head, the shoulders, roots

Cream Separators, all sizes and prices. O. J. Weber Co., 225-227-229-231 East Sixth street, Los Angeles.

Do your cows milk hard? Send 50 cents for teat expander. O. J. Weber Co., 225-227-229-231 East Sixth St., Los Angeles.

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SAVES WATER, GRADING AND TIME

The only scientifically constructed ***Surface Irrigation Pipe*** on the market. No round seams to leak, retard the flow of the water, or weaken the pipe. Cheaper than flumes. Easily handled. ***Will last a lifetime. The correct way to irrigate alfalfa.*** We make Riveted Water Pipe and Tanks. ***Write for illustrated catalogue.***

AMERICAN STEEL PIPE & TANK COMPANY

349 Pacific Electric Building **Los Angeles, California**

of the tail are usually most infected. The simplest remedy is to buy linseed oil and apply with a whitewash brush and then in seven days repeat the application. If this is thoroughly done there will be no further trouble from lice that season. It always seems foolish to feed lice, for that is what we are doing, for they eat the food after the cattle have prepared it for themselves, making a double waste of cattle energy. The oil will also destroy any ticks that are on the cattle and clean them from any other form of crawling insects—as chicken lice.

Black Leg.

It is only a few years ago that the losses in the river regions were heavy from black leg. Then the Government took it up and found a vaccine that has proven itself entirely successful. The loss of calves has been reduced from 12 per cent of all the calves to less than 0.46 per cent. The vaccine can be purchased and used by anyone that has ordinary skill and is clean in their work.

Disease.

The elimination of disease makes cattle stronger—for a sickly calf rarely makes a desirable cow. The human family has been slow to apply this lesson to itself and the devitalizing influence of illness was not full appreciated. The dear old-time mother thought the children were sure to have the measles and deliberately sent them to catch them, when it would be convenient to have the illness. The time of soap making, house cleaning, butchering was not propitious and if the children did not have their disease before these important events in the household calendar, it was serious. The mothers of today should sing for joy that they are relieved of the necessity of having the children suffer. The control the world is securing today of disease makes one wish they could see the splendid race that a hundred years from now will occupy our places.

IN THE SALT RIVER VALLEY.

Writing of the Salt River Valley an Arizonian enthusiastically said: "Here in the Salt River Valley the visitor may drive in a day past a hundred thousand acres, all green with grass, alfalfa, vines, and fruit trees, and to every acre has been diverted water in needful and true proportion. Up toward the highland is seen the line of a great canal, upon which boats might be run. Above it lies the "desert," a gently-sloping plain, covered with dark-green creosote bush, with here and there a beautiful ironwood tree, or a curious palo verde, the latter in the spring time a huge bouquet of yellow blossoms. The fluted columns of the saguara, the giant cactus, bear aloft crowns of white flowers, while the buds of the broad-bladed prickly pear unfold to blooms of brightest red.

CONTENTED CATTLE GRAZING IN SALT RIVER VALLEY, ARIZONA.

"Below the canal, sharply in contrast, lies the land reclaimed. From every canal run scores of laterals, fed through gates over which the water-tender keeps a jealous eye. These laterals again divide, each branch to its own farm of whatever size. Out on the fields, bare-legged laborers receive the tide with welcoming shovels. In between long borders of earth, the water is diverted, till each bordered section is in turn well covered, and the irrigation is done. In this valley, so level is the land and so uniform is its gentle slope, that the task is usually unattended with any problem of how to make the water run up-hill. In the orchards and vineyards the water is conducted into furrows plowed in the well-loosened soil, and thus to every tree and vine."

And we don't blame the writer for his enthusiasm. The Salt River Valley is all right.

FISTULOUS WITHERS AND POLL EVIL.

These two affections are practically the same, except as to the location of the disease. As the name indicates, fistulous withers is a disease of the withers, and poll evil is a disease of the top of the head, or the poll. Both are caused by a bruise.

One will first recognize the affections by a swelling on the withers or the poll, at first, hot, hard, and tender, later cold, soft, and not very sensitive to the touch. In the course of a month from the first appearance of a swelling, the enlargement breaks and pus discharges througm an opening later called the fistulous opening. The abscess cavity will be emptied and then the fistulous opening will close until the cavity refills, only to open again and discharge the contents. This filling and discharging of the abscess will continue indefinitely until the animal receives proper treatment. The pus will work its way through between the layers of muscle and form tubes of fistulous canals. These form where the disease has reached the chronic stage. After the trouble has become chronic the horse is greatly reduced in flesh, and in many cases of poll evil the head is held stiffly; while lameness is quite pronounced in fistulous withers. The disease usually runs a chronic course of from three months to four years. In the worst cases of poll evil the large ligament back of the head is necrosed, and in fistulous withers quite frequently the scapula (shoulder blade) has the periosteum completely removed over a large area, thus delaying healing. The bones of the neck and over the top of the vertebrae of the withers are uncovered and nave the appearance of bones that have been boiled.

Treatment.

The pus cavities should be opened and all the fistulous tracts given free drainage. Disinfectants to kill the pus germs should be used in large quantities, keeping the pus out as much as possible. The latest treatment is the use of anti-suppurative vaccine, which has given very satisfactory results.—C. L. Barnes, Colorado Agricultural College.

WELL BRED AND WELL FED.

Now is the time to begin looking for good stock to place in your hog herd. The sooner you buy after weaning the better bargain you will get for your money, as a breeder can afford to let you take your pick just after weaning at a price that he will ask you later on for a bunch that has been all picked over. Feed and care mean money to him as well as to you, and the earlier he can turn his pigs the better bargain he will give you as a rule. There is no sense in raising just ordinary hog that shows his scrub ancestry in all his make-up, when you can buy pure bred sows that will fatten easily and be smooth when fattened at from $15 to $30 per head. The first crop of pigs will pay the extra cost of the sows.

And when once you have bought good young stuff, don't put it out on pasture without a bite of grain and let it stunt. If there is anything that tries the good nature of a hog man, it is to sell good stuff to some one who starves it and then comes back with the complaint that it is not doing well.—Ranch and Range.

FARMERS INSTITUTE.

Napa Grange No. 307 is a "live one" in every way and in the matter of the Farmers Institute conducted by the State University the grange has busied itself in adding to the regular University program with music and other features by local talent. In addition an exhibit of Napa county exhibits for which cash and other prizes will be awarded will be a feature.

The Institute is for two days, October 3 and 4.

Sugar Beet Pulp takes place of green grass as a milk producer. 40c per ton. Los Angeles Sugar Factory.

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The Ornamental Garden

GET READY FOR THE BULBS.

With the advent of our California winter or rainy season one's thoughts turn seriously and with pleasant anticipation to plants and gardening, ranging all the way from a small plot in the front yard to large acreages of field and orchard. As applied to the ornamentals, the first thing to present itself for the fall operations will be the selection and planting of bulbs for winter and spring flowers. Already the plant and seed people have issued their announcements covering this group of plants, and soon many of our readers will be in the midst of making purchases and getting ready for the operation. And right here a word of caution may not be amiss. It is none too soon to get your soil in good tilth and enriched with well rotted manure by the time the first rains set in. Wherever possible the ground can be irrigated and thoroughly spaded up. It may be said that all bulbous plants are partial to a rich loamy soil. The range of choice is almost endless, and its scope and variety should correspond to the situation and area of ground at one's disposal for the bulb garden. Many kinds are so common and prolific with us that it seems almost a waste of effort to resort to an enumeration. Nevertheless no garden should be without its clumps of callas, borders of freesias, rows of gladiolus, hyacinths, iris, amaryllis, narcissus, ixias, lillies, ranunculus, watsonias, etc. Culture and care form no obstacle to their possession, even on the home grounds of a lazy man or woman, as the essentials are merely a rich and finely comminuted soil, kept free from weeds. Usually the winter rains are sufficient to insure splendid blooms, but in case the season goes "dry," or the natural precipitation is scant, it will then be advisable to keep the soil good and moist by irrigating. While there is still plenty of time to put in a bulb garden, to those who have the itching palm for digging in the dirt and planting, it is quite safe to put in any or all of the bulbous plants herein mentioned at anytime between the latter part of September and the first of January. A few brief cultural directions are here given:

LILIUM CANDIDUM—THE ANNUNCIATION LILY.

A CALIFORNIA FIELD OF CALLAS.

The calla lily enjoys a rich soil and plenty of water; situations affording partial shade are desirable in this dry summer climate.

Freesias succeed best in light soil, and may be planted from August to November, from 2 to 3 inches deep, the flowers which appear in February and March, are white, fragrant, and useful for cut flowers.

Plant gladiolus so that the top of

Continued on page 311.

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Best There Is
For Cover Crop
Carload just in. Write for sample and price, stating quantity wanted.
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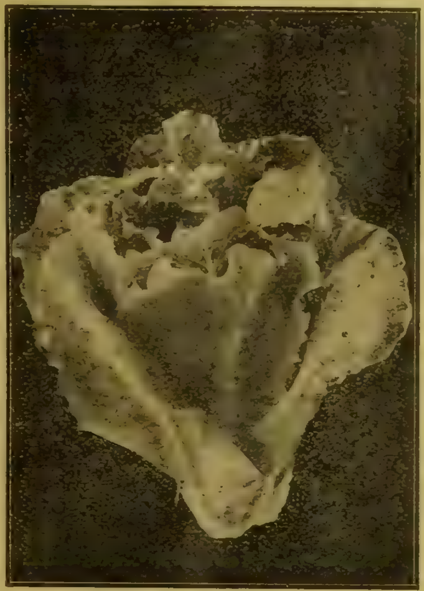
Garden and Field Crops

COS WHITE LETTUCE.

In California where irrigation water is available, lettuce can be sown nearly in every month of the year, though. like many other growths, it gives best results when planted during the moist, cool season of the early spring months. Under normal conditions the seeds readily germinate and the plant is of rapid development. The most common practice is to sow in drills, give clean culture and thin out the plant in the row to the width of from four to six inches. Again, many prefer to transplant from box or cold frame to the garden. If this is practiced, fine heads are assured by digging trenches and placing at the bottom fine horse manure, then cover with a couple of inches of garden soil, and on this place the plants, covering the same to the necessary depth with ordinary garden soil. On heavy land this system affords drainage.



WHITE COS LETTUCE.

The Cos lettuces, of which an illustration is shown, are distinguished from the cabbage varieties by the shape of their leaves, which are elongated and almost spoon-shaped. Head of mature plant long and tall, but blunt and rounded at the top; color light green; leaves somewhat folded, with the midrib light in color and prominent. It likes a rich soil and plenty of water. When given intensive culture it heads in from seven to eight weeks. Leaves crisp and tender and of fine flavor; somewhat resistant to warm weather.

DRYING VEGETABLES.

Many of the green vegetables, such as peas, string beans, sweet corn, etc., are more easily dried than canned, and more healthful, if canning powder is to be used, since the powder, by reason of its preservative qualities, renders the vegetable more or less indigestible.

Drying Green Peas.

After the peas are shelled and washed, turn into a kettle of boiling water and let boil briskly for one minute. Pour off the water and spread the peas on a drying frame in the open air or on platters to dry slowly in the dry oven. The one minute scalding is an important part of the process. If the peas are dried without scalding they will not soak out again. When wanted for use, let the peas soak over night in water and throw into a kettle of boiling water, to which has been added a fourth of a teaspoonful of baking soda. Let boil ten minutes to soften the skins, which have been rendered tough in the drying, pour off the water and finish cooking in your favorite way.

Drying String Beans.

Pick off only very tender pods and snap off the ends, breaking into inch lengths. Drop into boiling water for one minute; pour off water and spread out to dry. When wanted soak over night and if you do not like the "beany" taste, cook in soda water as directed for peas; pour off water ten minutes and finish cooking in clear water.

Drying Sweet Corn.

The sweet corn should be freshly picked to retain sweetness. After husking and silking the corn, throw into boiling water and cook one-half hour. Lift to a pan and cool, score the length of the cob with a sharp knife and press out the kernel with a downward stroke of the edge of the knife. In this way the hull of the kernel is left on the cob. When wanted for use it may be ground into meal with the aid of a food grinder and made into a thick soup, or cooked whole after soaking a while.

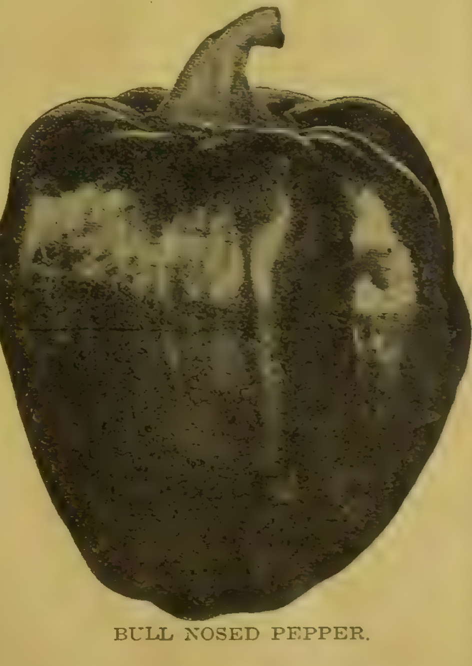
Drying Okra.

Use only young tender pods and plunge, after washing, into boiling water, to which has been added a half teaspoonful of salt to a quart kettle of water. Boil one minute and split the pods lengthwise. Dry thoroughly and when wanted for use soak over night in water.

A cheap drying frame may be made by tacking white cheesecloth on an old screen door frame, spreading over it a white mosquito bar to prevent flies from getting in. If a storm comes up it may be easily gathered up and the drying process finished in shallow cloth-lined pans in a slow oven, as, in the case of sweet corn drying, the wet corn might sour over night.—Michigan Farmer.

CAPSICUM OR RED PEPPERS.

Usually this group of plants are rated as annuals, though several species may be perennial in warm countries. All are native to South America, and possess erect branching stems which at times became more or less woody. Sow in seed boxes or cold frames; transplant when the weather is favorable to open ground in rows 18 inches apart and 10 inches apart in the row. For best results the soil should be highly manured and subjected to fine tilth before transplanting takes place. When about six inches high hoe the plants well and earth up slightly.



BULL NOSED PEPPER.

Capsicum or Red Peppers have a wide use in the realm of domestic economy, both as a condiment and for medicinal purposes. Some varieties when ground make the Cayenne, red pepper, and paprika of commerce; the pods of the large and fleshy kinds are not pungent, and for this reason can be used as a vegetable in about the same way as egg plant. Their greatest use, however, is for flavoring in cooking.

The university farm school at Davis opened Tuesday with an enrollment of 66, as compared with 42 students registered for work last year.

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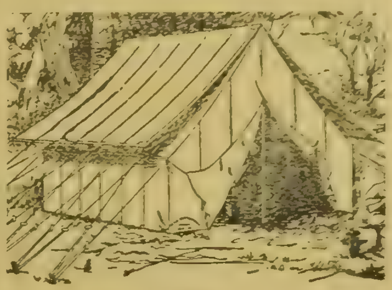

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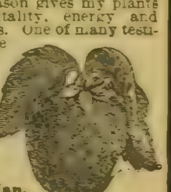

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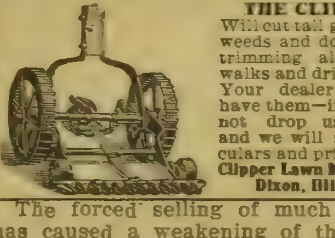

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A Journal of Horticulture and Agriculture

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Irrigation Congress.

At this writing the State Rights question has not yet bobbed up in National Irrigation Congress in session in Pueblo. The friends of federal control are confident that if it does they are strong enough to overcome and hold the congress in line for maintenance of conservation and other policies, especially water distribution of the government. California delegates have concurred and resolved to stand by the Reclamation Service. The California delegation is also using every possible argument to secure an indorsement by the Congress of San Francisco as the location of the 1915 World's Fair.

In his opening address President Fowler said:

"This congress must watch over and continue to contribute to the development and growth of its foster children, national forestry and irrigation. The kindred subject of national drainage of the swamp lands of the South and the East will need its help, national waterways and the system of treatment of our rivers, especially at the headwaters, will demand and should receive our careful consideration and aid.

"Here, in this congress of the people in the national forum for the consideration of all vital questions relating to the uses and advices of water, irrigation and forestry, and so long as the governments of the people, by the people, and for the people, shall live, so long will the need of great popular convocations like this exist and appeal to the people who boast of enlightened freedom."

World's Exposition.

Although a technical error necessitates the calling of another special session of the state legislature that a correction of three words may be made in the Act permitting the vote on the five million dollar world's fair proopsition and the additional five millions for San Francisco, it may be admitted now that the proposition is squarely before the voters of the state for decision November 8. It is a state issue and not a local one. It may be admitted that in a larger sense it is a Coast or even a national question, but particularly now we wish to emphasize the fact that it is not a San Francisco fair. In fact the San Diego people, promoters of the Panama-California Exposition, are uniting heartily with others in the state to work for a big vote for the bonds. The vote will not be a unanimous one but we believe without question it will carry by a large majority.

The vast sum which will be secured for this exposition should make it one which all the world will acknowledge to be the greatest in history. For the producing class which the Cultivator represents we appeal for an especial recognition for California's greatest interest—agriculture—we mean agriculture in its larger sense. The reputation of our fruits is world wide. The stream of gold from our mines was the wonder of all, but the golden stream from soil production is greater, the attractiveness of fruit culture has brought many a settler to the state.

Then let the management of the show give early and earnest effort to encouraging the Coast to produce and to exhibit products which will truly represent its greatness. Still further, let there by gathered from all other countries every factor connected with agriculture which may be educational.

We cannot ask that the Panama-Pacific Exposition be made an agricultural fair for the arts, sciences, manufactures, mining and commerce will each demand greatest recognition and each will doubtless receive its share. But in this day of searching for that which will encourage a return to the soil, we may say that the best way to encourage such a move is simply to give justice to the calling which has to do with soil culture.

But possibly the above suggestions are premature, for New Orleans is still insistent that its claims be recognized by congress, therefore the present effort should be to show such a united front and such determination to put up a great show that congress will readily see that the interests of the nation lie only in the recognition of California's claim.

Now for the Squirrel.

Dr. Rupert Blue, vanquisher of the yellow fever mosquito in New Orleans and the bubonic plague spreading rats of San Francisco, states that the California ground squirrel is the next foe to be attacked.

"In the campaign against these disease-spreading and crop devastating rodents," he says, "Federal, State and County officials will work in supervisory and directory capacity in conjunction with land holders. The first step will be to inform the people on the habits of the squirrel and the flea by means of free public stereopticon lectures delivered by Federal and State health officers. The eradication of yellow fever in New Orleans, and of bubonic plague in San Francisco were similarly preceded by educational measures. In both instances it was demonstrated that the public can be relied upon to take intelligent and vigorous action if all the facts concerning a situation are submitted for their consideration. It is believed that putting the case clearly before the people will result in the necessary legal steps being taken by county supervisors which will insure concerted squirrel eradication measures on the part of land holders.

"The devastation of crops of all kinds by ground squirrels has always been a serious handicap in the development of agriculture in this state, and it is believed that farmers will promptly popularize a movement that will relieve them from an economic scourge of long standing and at the same time protect their families from the dangers of disease."

Walnut Prices.

The Walnut Growers Association of Southern California held a meeting at Los Angeles last Monday and recommended the following prices for the coming year:—No. 1 soft shells, 15 cents; No. 1 hard shells, 14½; No. 2's of both kinds, 11. Budded or grafted nuts not less than 2½ cents above these quotations provided graded over standard screen. Some of the growers favored lowering the price a cent or more from these quotations, but as outside growers have already sold at 15 it was deemed wise to hold fully up to that figure.

Such a figure probably would never have been offered had not co-operation on the part of such a large proportion of the growers tended to steady the market. Walnut producers are to be congratulated.

Join the Exchange.

Referring to an advertisement in a Los Angeles paper in which a fruit packer offered for sale his packing house and announced his retirement and entrance into the real estate business, the Florida Packer says:

"This you will recall, is a part of the combination that fought the California Fruit Exchange so strenuously for so many years. They had unlimited capital back of them and private cars galore. In course of time the citrus fruit growers of the Pacific slope came to realize that they could handle their shipments themselves to better advantage through the Exchange and so that company gracefully stepped aside. Florida growers should heed this lesson and get into the Exchange. The sooner they do so the sooner will the Exchange attain to the full measure of its usefulness in serving them."

Paying Tuition.

We once heard genial I. P. Roberts, formerly at the head of the Agricultural College at Cornell, remark that he would be in possession of almost untold wealth if he had not paid so much for his tuition. His tuition had been paid in the school of experience and had cost him so dearly that he must consider himself still a comparatively poor man. Practically the whole human race is doing the same thing, paying for lack of experience, and often for lack of perception of the lessons of experience; they have not secured the advantages they should from their "schooling." Our educational institutions are today offering better opportunities for the young man who would start right in agriculture than they did years ago. He will enter his calling better fitted than the farmer of a few decades ago, but no matter how good the schooling, experience will still prove the best teacher, and he should have his eyes open to her lessons.

The month of August was favorable for all crops the country over, and the deterioration amounted to only .6 per cent, whereas the average decline for that month is 3.3 per cent. The average crop conditions on September 1st, practically at harvest time, were only about .4 per cent lower than on the corresponding date of a year ago or 2.8 per cent lower than the average for the past ten years. The area under cultivation is about 3.2 per cent greater than last year.

All plans for the program of the dry farming congress to be held in Spokane the week of October 3rd, and for the exposition in connection, are completed and a great event is parts of the West, and even from all parts of the West ,and even from all parts of the world, will be there to discuss all questions touching upon methods which will advance the wealth of arid America.

The coming week will be one full of opportunity for those who can attend the short course in agriculture at the University farm at Davis. There will be lectures on keeping farm accounts, culture of alfalfa, formation of soils, fertilizer, improving of wheat, sugar beets, and many other topics by an excellent corps of instructors.

The Orange County Dried Fruit Association is now holding its remaining apricots at 11 and 12 cents. Seven to eight cents were their highest offers early in the season. A little co-operation aided in preventing many growers from selling at those early figures.

"No two winters alike and no two summers different" in California received a jolt from the freak rain, the damage from which is not yet fully estimated. As a rule, however, even the raisin men report damage not as great as first anticipated.

The twenty-fourth premium list of the Oregon Fruit Show is issued and gives a long list of prizes and premiums which will be awarded. The Show will be held in Portland, Oregon, Nov. 30 and Dec. 1. and 2.

Fight the pests. From all parts of the state come reports of renewed attack on all pests from Johnson grass or Russian thistle to squirrels. These pests cost too much. We cannot afford to harbor them.

The average condition of corn on September 1st was 78.2 as compared with 79.3 last month and 79.5 ten years' average.

The National Good Roads Convention will be held at Oklahoma City next week, October 4-6.

Agricultural News Notes of the Pacific Coast

Northern California

Arthur Dunlop, of Diamond City, is experimenting with pears by drying them in the sun. He has given the fruit a treatment of sulphur to bleach it and is drying five tons.

Prof. W. A. Setchell of the botany department of the University of California has nearly two hundred varieties of tobaccos planted in an experimental bed on the University campus.

William Grant, manager of Balfour-Guthrie Company's ranch near Biggs, Butte county, and G. B. Mann, soil expert, report that only 49 of the 200 varieties of rice planted have proved available.

Upward of two hundred acres of the Meek orchard property south of Haywards in Alameda county has been divided up into acreage tracts. This land is admirably adapted to fruit and poultry ranches.

Bartlett pear orchards in Sacramento and vicinity are again threatened with the malignant pear blight, which found its way into the Sacramento Valley and has so far been held fairly well in check by vigorous methods.

Two cars of first-class soft shell almonds were shipped last week from Orland to San Francisco. This is probably the largest lot of almonds ever shipped from Orland at one time and shows the value of the crop in that section.

Shipping of wine grapes from the Yuba district in Sutter county has commenced and from all reports the crop is good. Several of the large growers have contracts with the California Winery in Sacramento at about $11 per ton. Others sold this year at about $7 to $8 per ton.

Great flocks of geese are arriving on Butte Creek from their stays in the Northern wilds three weeks earlier than is their wont. Usually they do not arrive until a week or so past the first of October. That they are coming into California at this time means early rains.

The warehouse of the Sutter Almond Growers' Association is now under way and will be equipped with bleachers, scales, etc., for the handling of the almond crop. Growers will deliver the almonds at the warehouse when completed and the nuts will be bleached under the direction of the California Almond Growers' Exchange.

Within the past two years the Sebastopol Berry Growers' Incorporated, has developed into one of the strongest organizations in Sonoma county which has already done wonders in developing the berry growing industry and protecting the interests of the growers, as witness its shipments: 183 tons Loganberries, 57 tons blackberries, 18 tons raspberries, and 183 tons Lawton blackberries.

An effort is being made to introduce pheasant in the Pajaro valley. To that end Geo. P. Martin and H. C. Peckham recently received a consignment of Mongolians from the state farm at Haywards, of which Charles Voglesang is manager. The birds were sent to the Kelly-Thompson ranch where they will run the hills on that and neighboring ranches until their growth warrants good hunting.

The pear industry is an important one to Sacramento. Between 1500 and 2000 cars of Bartletts are shipped from that city to eastern markets every year. These sell for top prices and bring thousands of dollars into that city. On some days during the season as many as fifty cars of this fruit are forwarded. The sales east do not represent the total value of the crop. Hundreds of tons of pears are sold to local canneries every year.

Central California

San Jose's second annual pure food show opened Saturday evening, September 17. It is said that the interior of the Auditorium building was made far more attractive this year.

The death of hundreds of water fowl and game birds of all descriptions on the Boggs tract west of Stockton is causing the health authorities and game wardens much concern. The disease is somewhat like the roup which attacks chickens.

A careful estimate of this year's crop of raisins in Kings county gives an increase over 1909 of about 2000 tons, making the incoming crop 10,000 tons. Of this amount scarcely one-half has been contracted for, although $70 per ton has been reached.

One of the important creamery deals of the year in California was made recently when the business of the Ceres Creamery Association in Stanislaus county passed into the hands of Scheer, Grandi & Co., a leading produce firm in San Francisco.

Fame of the wheat raised on the Tagus ranch, one of the largest single wheat ranches in Central California, is reaching wide. An order has been received for twenty sacks from a wheat rancher of Walla Walla, Wash. On 530 acres last season the reported yield amounted to 11,000 sacks.

R. F. Guerin, prominent dairyman and breeder, with a ranch near Goshen, has received notice that his champion cow, Apple Blossom Sample, which took first premium at the Tulare county fair at Tulare a year ago, has been given a place on the grand register, in the Holstein herd book of the National association.

A Cultivator representative recently met D. R. Shaffer at Denair, Stanislaus county, the founder of the town of Orosi, Tulare county. In conversation he explained how he happened to coin the word Orosi: Oro in Spanish is gold; si, in Spanish means yes. Gold, yes—if you cultivate the land.

The Visalia Delta is responsible for the statement that by the first of the year Tulare county will probably be able to boast of the possession of the model dairy of the country. It is planned to erect it on the Tagus ranch, nine miles southwest of Visalia, which consists of 2800 acres of fertile land on Packwood creek.

The Fresno county fair, October 3 to 8 inclusive, will be the biggest thing of the kind ever pulled off in the San Joaquin valley. The directors of this year's fair have mapped out a program of special events that is bound to attract. Among the features may be mentioned: Governor's day, Union Labor day, Fraternal Order day, Queen's day, Fireworks display, Carnival day.

Judging from general indications the market for orange trees in the San Joaquin valley will rule high, as the available supplies are somewhat limited. According to the Porterville Enterprise, at the present time the ruling quotations on trees are about as follows: Orange trees, ⅝ to ¾ inch in diameter in 100 lots or over, $1.10; ½ to ⅝ inch in diameter in 100 lots or over, $1.00; ⅜ to ½ inch in diameter in 100 lots or over, 90c.

The different locality days for the apple show at Watsonville (Oct. 10-15) have been allotted as follows: Monday, "Governor's Day," when Governor J. N. Gillette will be present and address the apple men. Tuesday, "Schools' Day." Wednesday, "Panama-Pacific and All California Day." Thursday, "Home Coming and Sight Seeing Day." Friday, "Santa Cruz, Monterey and adjoining Counties Day," Saturday, "Automobile Day." The date for closing the entries of exhibits was extended from Sept. 26 to Sept. 27.

Southern California

Wild ducks are so plentiful in the El Centro district that they are a nuisance to ranchers. An effort will be made to change the game laws to permit shooting them after the 1st of September.

The Escondido Times says that Charles Dixon, living at the upper end of the valley, is the proud owner of a single plant that produced fourteen pounds of rhubarb. In the language of the street, "that's going some."

With the completion of the contract for the icing of Santa Fe fruit cars, Will H. Godfrey will on October 1 assume charge of the Gate City Ice and Pre-Cooling company's plant, where the fruit cars are to be refrigerated entirely in the future.

E. C. Richmond of Goldfield has bought the George H. Lawrence ranch at San Luis Rey, paying $4200. The place comprises 40 acres with water rights. He will engage in the dairy business and proposes to plant fifteen acres to alfalfa at once.

At a directors' meeting of the Richland (Orange county) Walnut Association held recently, Wm. Wagner was elected secretary for the coming year. H. L. Helwig was appointed house manager. The crop estimate is placed by President Hargrave at about 20 to 25 per cent less than last year.

J. W. Gregg and C. R. John recently bought the Copelin ranch in the San Jacinto mountains and will add to the apple acreage of the place during the year. The apple-producing area of Southern California is limited and as the cities are growing a profitable market is reasonably assured.

The plant of the California Silk Mills at San Diego is closed during the absence of W. H. Hibbard. It is reported that he is East on business and that he may not return. There is a small amount of silk in the looms but the place gives an appearance of having degenerated into a state of innocuous desuetude.

According to the Fullerton Tribune, J. E. Stockwell is successfully growing several varieties of tobacco on his place near that town. Experts who looked over the crop a few days ago declare it looks as well as any ever grown back in the Southern states. Stockwell has been offered a good price for his entire crop.

Several of the apricot growers in the Big Simi valley, Ventura county, have together purchased a large power spraying outfit. They intend to spray their orchards for the black scale, which has been worse than usual the past year. After spraying their own orchards they intend to rent the outfit to other growers.

For $23,000, J. P. Gilmore has sold two orange groves, one in Riverside and the other at West Riverside. The purchaser was Mrs. J. H. Bakeman of Los Angeles. The Riverside grove consisting of ten acres, sold for $14,000. The West Riverside ranch comprises 17½ acres, is located opposite the school house ad a mile and a half from Riverside. The consideration was $9000. Only a portion of the property is planted to oranges, the remainder being grain land.

John A. Dent, of Ventura, is trying to organize the apricot growers. In a late letter written Mr. Dent says: "As far as I can learn, there were 4100 tons of dried apricots last year, and 1500 tons this year. There are about 400 tons unsold which are being held at 12 cents. One of my neighbors sold September 7 for 11 cents. I think we will get the 12 cents. The names already signed for an association represent 350 acres of apricots, and I have not had time to get over more than one-fourth of the county."

The Coast

The dates for Oregon's big apple show are November 30 and December 8. It is said that the show will be the largest affair of the kind ever held in the Northwest.

All merchantable timber in the burned areas in the national forests of Washington and Oregon will be sold immediately. Plans for its sale have been completed by the forestry service.

Oregon lands aggregating 1,873,280 acres were thrown open to settlement September 15 under the provisions of the enlarged homestead act by authority of Acting Secretary Pierce of the interior department.

One of the largest sales in recent weeks, in the Lewiston (Idaho) orchard tracts was made September 15. W. T. Mullarky selling 10 acres of 3-year-old orchard to John W. Haben of Duluth, Minn., for $856 an acre.

Four thousand five hundred boxes of pears is this season's production on the famous J. G. Gore orchard on the Ashland road, Medford, Oregon, This made a shipment of 11 cars. Last year Mr. Gore shipped 12 cars from the same land.

Pacific Coast apples have the occident and the orient for a market. Recently Messrs. Richey & Gilbert, of North Yakima, Washington, secured two orders for 100 cars of apples each. One of the shipments went to Australia and the other to New York.

With an estimated crop of 60,000 tons of hay for market in the Kittitas Valley, Washington, and fully 100,000 in the Yakima Valley and with timothy selling at $19 to $21 on board cars and alfalfa at $11 to $13, the hay farmers of the Inland Empire are feeling pretty well satisfied, thank you.

During eight months ending with August, as shown by Department of Commerce figures, Puget Sound exported more wheat than any other customs district in the United States, 1,945,088 bushels, all told. In that same time Portland exported 1,396,917 bushels, ranking fourth among wheat exporting districts.

The government scored an important victory in the United States District Court for Oregon when decisions were handed down setting aside patents on thirty-seven claims to timber lands aggregating 6000 acres, valued at more than $500,000, which were held by the C. A. Smith Lumber Company of Minneapolis.

With a view to procuring information on Mexican agriculture to be sent to the International Institute of Agriculture in Rome, the department recently asked the governors of the several Mexican states a series of questions. For definite replies these have in turn been sent to all subordinate officers in the service.

The survey of the Zamboanga Townsite (Philippine Islands) and the agricultural lands adjacent thereto has been progressing under the direction of the Bureau of Lands since January, 1908. There is included in this area 10,050 hectares and its limits extend from the western boundary of San Ramon Farm to the barrio of Catumbal north of Mercedes.

An agricultural school for pagan children is being established in the district of Davao, Island of Mindanao, Philippine Islands. C. R. Cameron, provincial superintendent of schools, has been working on the plan for some time. The purpose of the school will be to teach its pupils practical agriculture as it is carried on in the Gulf of Davao, together with English, reading, writing and arithmetic, also the incidental trades such as carpentry, blacksmithing, etc., which experience has proved to be necessary for the successful operation of a plantation.

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1500 to 2000 Splendid Pullets and Laying Hens

in our yards and orchards every day. Finest and largest poultry sales yards in Los Angeles. Lately sold over 20,000 birds. We have on hand daily from twenty to thirty different breeds. Ask about P. Cook's Extra Select White Leghorns, the finest, largest, most prolific layers in the world. Only $15.00 per dozen. This week also the best flock of White Minorcas in California for sale. Only $3.00 each for hens. Guaranteed to win in almost any show. We are the largest shippers, both wholesale and retail, of fine poultry. Good White Leghorns this week at $9.00 per dozen. All other breeds in proportion. Write for catalog. Buy where you can get birds that can be depended upon.

P. Cook, 3017 S. Main St., Los Angeles, Cal.

If you want your hens to lay more of those high-priced eggs, feed

West Coast Egg Food

Nothing better made for the purpose, and the price is now only $1.80 for 75-lb. sack, or $45.00 for a ton. If not sold by your dealer, sent to us. Or, if you are distant from Los Angeles, and have good grain products cheaper than to ship them in, you can make your own Egg Food as good as anybody's.

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tells you how. It is free. Send for it. Send us addresses of 5 persons in your vicinity who have fowls, and we will send you an Anchor Egg Separator. Or, for 20 addresses, we will also send The Poultry Manual, a book well worth 50c, both postpaid.

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EGG FOOD

If you were going to erect a large building, you would consult an architect—if you wanted some legal papers drawn up, you would go to a lawyer—because these men have made a special study of their respective professions.

The same principle applies to the feeding of your chickens. Presumably you have not the machinery or formula for making an egg food so that it will be just what your hens need.

That's why you should buy COULSON'S EGG FOOD. It is the result of years of study—it is scientifically mixed by experts with the right proportions of the various ingredients to give a balanced ration.

COULSON'S EGG FOOD means a healthy stock, with great laying power and eggs of quality. Saves you the time of mixing—provides a better feed—makes more eggs—means more profit, as COULSON'S EGG FOOD more than pays for itself, through making hens lay to their full capacity.

It is especially advantageous to use it at the present time, when the price of eggs is beginning to increase, and when also you are anxious to have your hens in good condition for the molting season.

Hens eat only what they like, but there are many foods they must have, and which must be mixed with their regular food so that they get the desired quantity. The only way the food can be mixed is by improved machinery—that's why you should feed COULSON'S EGG FOOD.

Get it at your dealer's; anyway send for our Catalog which tells about the famous Coulson products and gives valuable information about Poultry Raising.

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JDA

Practical Poultry Culture

A POPULAR WHITE BIRD.

In California breeders seem to have a liking for a white bird. As an evidence of this we have only to cite the predominance of the White Leghorn over all the parti-colored varieties; the preference in many cases of the White Wyandotte over the dark plumaged sorts; and the popularity of the White Plymouth Rock over the other varieties, with possibly the exception of the Barred, which seems to hold its own against all rivals. From a fancy point of view type, color of feather is invariably a matter of individual taste; but when it comes to economic considerations, the bird giving the best returns in hen fruit and carcass usually stands supreme. In type and other points excepting color of plumage, the White Rocks in no way differs from the other varieties of the breed. It was first introduced by a Mr. Frost in Maine as early as 1880. The "make-up" of the different blood that went into its creation is a subject that does not particularly interest the practical man; suffice it to say that the variety has became sufficiently "fixed" to breed reasonably true to type and color of plumage. In its earlier stages matings often showed white and black chicks and also mixed colors, which would indicate that its inception was from sports of the Barred variety. Even at this late day there is a tendency of mealiness and black appearing in plumage.

In habit the White Rocks are much more docile than the Leghorns, and hence stand confinement reasonably well. Unless given healthy exercise, they are apt to become overfat which is not desirable in good laying hens, and besides it tends to aggravate liver troubles. As layers the females rank well, particularly so if from a good laying strain. The carcass has everything to commend it for table purposes. Indeed, as an all purpose fowl they are as good as the best.

STANDARD WHITE ROCK HEN.

SECRET OF MARKETING FEATHERS.

Miss Frances E. Wheeler, one of the most successful breeders of land and water-fowl, gives these points on successfully marketing feathers:

In almost every large city there are wholesale feather dealers and establishments where feathers are made up into fancy millinery adornments and trimmings, such as boas, etc., and where can be found a market for the entire output.

Turkey feathers, especially the white ones, find a ready sale and at good prices. Each kind should be kept separate, clean, and laid smoothly in a box all the ends pointing the same way. The different kinds of feathers are known as the fluff, the skirt, the body, the long and short tail, and the three sorts of wing feathers.

Of Pekin duck feathers there are the first joint of the wing to be cut off, and the coarse feathers plucked. The fine feathers and the down may be plucked together.

The long tail and fine saddle feathers of roosters find ready sale at fancy prices.

I pack all my feathers smooth and tight in a paper box if to be sent by express, or in a light wooden box if to go by freight.

After plucking, the feathers should be spread on a clean floor and shaken up and turned over two or three times a week. They cure in about six weeks. Should there be a bad odor to the feathers, the case containing them should be laid on a clean grass-plot for a few nights, the feathers shaken up occasionally, and the earth will draw out every particle of odor and leave just the sweetest, cleanest smell imaginable.—Poultry Secrets.

Wheat is a better food for egg production than corn. The latter is heating, fat producing, and is excellent in cold weather, especially at night.

LINSEED MEAL FOR POULTRY.

Linseed meal is highly nitrogenous and is invaluable as a food for poultry. It is much superior to cotton-seed meal, as the seeds from which it is made are fully matured. This addition to the regular food may be given the fowls at all seasons of the year, but it is especially good for them during the cold months of winter. It is not so heating that it will prohibit the hens from laying, but will aid them in that function, as well as assisting their bodies to remain in good condition during the cold weather. Linseed meal is richer in the elements of growth than many other foods, and even when the hens are allowed a plentiful supply of grain, it is well to allow them a certain percentage of the meal. To every quart of ground grain used add about a gill of linseed meal. While it aids the fowls in their work it also greatly enriches the manure, thus making another product of the fowls much more valuable. It is rich in mineral and nitrogenous matters and serves to make a balanced ration. Do not give the linseed meal oftener than once a day during the winter, and about half as often during the warm weather.

There are many varieties of foods which must be purchased in mixed condition and the poultryman does not know exactly what they contain, but when he selects his own food and balances it well with linseed he will find that the fowls derive as much, if not more, benefit from it as from the more expensive materials. A greater portion of the chick and hen foods which come already prepared have a certain percentage of the linseed meal in them, and that is the secret of their success. It is not true in all cases, but it is added to nearly all the prepared foods. Give the hens a good supply of egg-producing materials, to which has been added the linseed meal, and see if they do not prosper. It will at least be found beneficial to a certain extent.—Mirror and Farmer.

FAT HENS IN THE POULTRY YARD.

When asked at the Ontario poultry institute whether or not a hen was apt to get too fat to lay, James E. Rice, the well known poultry authority at Cornell, N. Y., stated that he could not answer the question satisfactorily. He related the following experience:

Once we killed all the hens in one of our experiments, and we found that the fattest hens were the hens that were in the best laying condition, and since that time we have been making very careful observations along that point. A hen to be in a good laying condition must have fat in her body. The production of eggs is based upon the fact that the hen has lots of stored up energy in her condition; and a hen cannot lay an egg until she has got fat in her body, because the yolk in an egg is about half fat, and she has got to have oil there to make the first part of the egg.

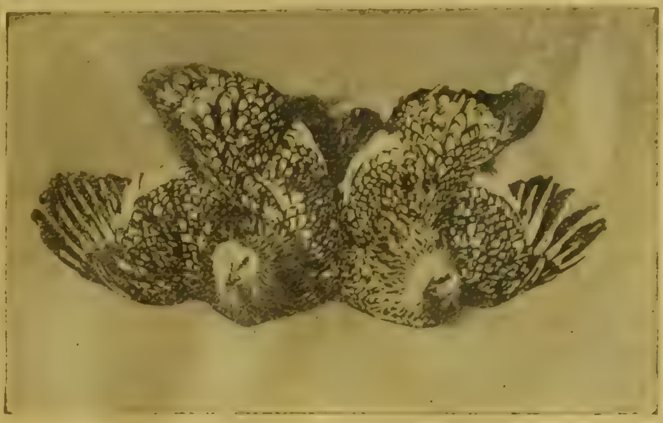
The three fattest hens we killed were in the best laying condition, and the three poorest hens we turned out by themselves, and there was not the faintest chance of them laying for two or three months. They were not poor hens in the sense of being thin. They simply did not have a large amount of fat in their bodies. How are we to feed a flock of hens? We cannot feed the individuals according to their immediate needs. The dairyman is in a different position, as he can feed each cow all she requires.

CONTAGIOUS FOWL DIPHTHERIA.

Recent experiments made by G. Schmid, particulars of which are given in a German goverment bulletin, seem to establish it as contagious. The results are given of an investigation with 60 cockerels and 83 hens from which the author concludes that it is possible to produce typical pock lesions in chickens having diphtheria, and further, that bird pox is not a separate disease but a part of the diphtheria and has the same etiology. Fowl diphtheria occurs in 3 forms: That affecting the mucous membrane, that affecting the skin, and a combination of the two.

TWO FINE SPECIMENS.

Among the tribe of Wyandotte fowl the Silver Laced were among the first to attract public attention. Indeed, in the eighties this variety was easily in the lead in the American class, especially in the Middle West. A few years later it also became popular on this coast—a popularity which of late years has been somewhat on the wane. The distinctive feature of the Silvers is that the feathers of the hen are white with narrow edging or lacing of deep black around the edge. The breast of cock is of the same color, while other parts of the body are a silvery white, the neck and saddle feathers having a black stripe through the center, while the tail is a greenish black. The two pullets we show herewith were bred a few years ago by a Mr. Hohenshell, who at that time had a poultry plant in San Diego county, but has since moved north. At one time his stock was recognized as among the best bred in this state.



FINELY MARKED S. L. WYANDOTTE PULLETS.

POULTRY IN THE POMONA VALLEY.

Recently it was the pleasure of the writer to spend a few days in Pomona, on which occasion he was surprised and gratified to learn of the healthy growth that the poultry industry has attained in that valley. Many of the fruit growers have learned the value of a flock of thoroughbred fowl as adjuncts to their main business; that hen fruit has a value quite as staple as the orange or the apricot. For the most part the Mediterranean and American classes predominate, Leghorns being favorites of the former and Wyandottes and Plymouth Rocks of the latter. The colony plan in caretaking is quite common, the houses being located directly in the orchards. Numbers under single ownership vary somewhat; there are a few people who have from five hundred to a thousand head, but the farm flocks will average about one hundred and fifty head each. A good market is assured by reason of close proximity to Los Angeles. When the local demand is light shipments are made direct to Arizona, chiefly to the mining settlements. The industry has advanced sufficiently to be beyond the experimental stage, and we look for a healthy development and expansion during the next few years.

POULTRY IN THE POMONA VALLEY.

GOOD RETURNS FROM DUCKS.

A flock of ducks increases my profit on the farm every year. The eggs are sold at good prices in the spring for setting, and there is always a good sale for the feathers. I raise the large full-blooded Pekins, which sometimes weigh more than seven pounds when sold in the fall. They are much less trouble than chickens or turkeys, because they seldom die from disease.

Ducks will almost take care of themselves after they have been hatched a short time. Set the eggs in May, and as soon as the ducklings are large enough to eat, sprinkle thick curd in their boxes. Shallow vessels should be used for watering. When the ducklings get a little older, feed potato peelings mixed with corn-meal and scraps from the table. They will do much better when the feed is changed often. As they grow older feed some grain, such as rye, wheat and corn. When all the grain fed is raised on the farm, the cost of keeping ducks is quite small. I have turned my ducks into a potato patch with bugs on the vines, and they entirely rid the vines of the bugs in a very short time.—Farm Journal.

POULTRY POINTS.

Fowls need more food in wet weather than in dry, in cold than in hot, and in wet and cold weather combined more still is required. Give plenty, but not too much. When food is left lying about it gets dirty, and entices sparrows, mice and other vermin.

A clean, dry house is the mainstay to success. Dry up and get busy with the whitewash brush.—Poultry Record.

A Healthy Chicken is an asset, a sick Chicken is a liability: because it is apt to give disease to others, it's therefore a loss not a gain.

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Farmers' Week

We have from Prof. Leroy Anderson, superintendent of Farm Schools, the program for the coming farmers week at the University Farm at Davis, as follows:

October 10.—Introductory Lecture, E. J. Wickton____Principles of Pruning and Treatment of Young Vines, F. T. Bioletti____Horticulture at the University Farm, W. T. Clarke____Demonstration in Judging Dairy Cattle, J. S. Thompson____Invocation, Rev. T. J. Barkle, Davis____Address of Welcome, E. J. Wickson____Observations on My Summer Outing, Judge Peter J. Shields, Sacramento.

Tuesday, October 11.—Butter Fat Losses on the Farm, H. A. Hopper____Forage Crops. (Second lecture.), E. J. Wickson____Judging the Quality of Land, I. P. Roberts, Palo Alta____The Physical Condiiton of Soils, Professor F. H. King, Madison, Wisconsin____Essential of Success in Grain Culture, G. W. Shaw____The Needs of the Modern Creamery, H. A. Hopper____(Presentation of the prize calf in competition between University Farm Creamery patrons.)____Choice and Preparation of Land for the Orchard, W. T. Clarke____Dry Land Farming with Relation to California, G. W. Shaw____Demonstration in Judging Beef Cattle, E. W. Major____University Farm Students' Association Annual Meeting and Election of Officers, W. O. Russell____Illustrated Lecture on Soil Studies, F. H. King.

Wednesday, October 12.—The Importance and Methods of Making Butter Fat Tests on the Farm, H. A. Hopper____Forage Crops. (Third lecture.), E. J. Wickson____Improving the Land, I. P. Roberts____Control of Infectious Diseases in California, Dr. Chas. Keane, State Veterinarian____The Young Tree and Its Care, W. T. Clarke____Results of Animal Disease Investigations by University of California, C. M. Haring____Essentials of Success in Grain Culture, G. W. Shaw____What is Soil Fertility? C. B. Lipman____Demonstration in Judging of Draft Horses, Howard Phillips____Autopsy of Tubercular Animal, Dr. Geo. W. Baker____(Chief Inspector, Bureau of Animal Industry, San Francisco)____Meat and Milk Inspection, (Illustrated to stereopticon), Dr. Geo. W. Baker.

Thursday, October 13.—The Milk Production Problem, H. A. Hopper____Forage Corps, (Fourth lecture), E. J. Wickson____Country Life Conference, W. A. Beard, Sacramento, Chairman____Social and Educational Organizations of Farmers, E. T. Pettit, Master State Grange, Discussion led by B. F. Walton, Yuba City____The Country Church, Arthur Hicks, Field Sec. Presbyterian Church. Discussion led by Mrs. E. C. Laugenor, Woodland, and Professor Roberts, Palo Alto____The Country Problem as It Presents Itself to the Farmers's Wife, Mrs. F. T. Gage, Elk Grove____Discussion led by Mrs. G. W. Pierce, Davis, and Mrs. Emily Hoppin, Yolo____Address, President Wheeler. Rural Schools, Jas. A. Barr, Superintendent of Schools, Stockton. Discussion led by Edward Hyatt, State Superintendent Public Instruction; Miss Lillie L. Laugenor, Superintendent of Schools, Colusa county, and LeRoy B. Smith, Director California Polytechnic School, San Luis Obispo____Health and Sanitation in the Farm, Dr. W. F. Snow, Secretary State Board of Health____Co-operative Marketing, J. W. Jeffrey, State Commissioner Horticulture. Discussion led by J. P. Dargitz, Acampo____Farm Labor, W. A. Vann, Colusa, Discussion led by Geo. D. Kellogg, and G. H. Hecke, Woodland____Address: Industrial Education, W. A. Beard, Sacramento.

Friday, Otcober 14.—Defects in California Butter, H. A. Hopper____Forage Crops, (Fifth lecture), E. J. Wickson____Orchard Protection, W. T. Clarke____Insects of the Young Orchard, I. C. Bridwell____Immigration Affecting Agriculture, Professor I. P. Roberts____Various Systems of Summer Pruning, F. T. Bioletti____Administration of the Pure Food Law, M. E. Jaffa____Use of Concrete in Irrigation Structures, B. A. Etcheverry____Results of Duty of Water Experiments at Davis, Frank Adams____Demonstration in Judging Sheep, Howard Phillips____Concert by the University of California Glee Club, (C. R. Morse, director), Pavilion.

Saturday, October 15.—Care of Utensils and the Handling of Cream on the Farm, H. A. Hopper____The Control of Garden Insects, C. W. Woodworth____Grafting of Vines, F. T. Bioletti____The Application of Insecticides, C. W. Woodworth____Demonstration in Judging Swine, Howard Phillips____Meeting in charge of Sacramento Valley Development Association, (Marshall Diggs, President; O. K. Miller, Secretary), Pavilion, Subject: Good Roads.

Home Economics for Farmers' Week.

The lectures on Home Economics and demonstrations in cooking are given by Miss Clara Palmer, Instructor in Domestic Science at the California Polytechnic School, San Luis Obispo, and recently from Teachers College, New York. This work will be given in the Dairy Building, Rooms 9 and 10.

Monday, October 10.—Lecture and Demonstration in Cooking, Miss Palmer.

Tuesday, October 11.—Lecture: Home Economics, Miss Palmer____Insects Injurious to Health, W. B. Herms____Lecture and Demonstration in Cooking, Miss Palmer.

Wednesday, October 12.—Composition of Foods, M. E. Jaffa____Suggestions for Home Grounds, R. E. Mansell____Education of Farmers' Daughters, LeRoy B. Smith, Director California Polytechnic School____Demonstration in Cooking, Miss Palmer.

Thursday, October 13.—Household Sanitation, Dr. W. F. Snow, Sacramento____Remainder of Day, Country Life Conference.

Thursday, October 14.—Use and Value of Skim Milk, M. E. Jaffa____Sanitary Construction of the Home, C. G. Hyde____Administration of the Pure Food Law, M. E. Jaffa____Demonstration in Cooking, Miss Palmer.

Saturday, Otcober 15.—Lecture and Demonstration in Cooking, Miss Palmer.

Secretary O. H. Miller of the Sacramento Valley Development Association has secured from the State fair the exhibits of Tehama, Glenn, Colusa and Butte counties, to be placed on exhibition at the United States Land and Irrigation Congress at Chicago, and later to be transferred to a building at the corner of Washington and Dearborn streets, Chicago, where they will be shown under the management of the Sacramento Valley Irrigation Company.

Mr. John Sollie, of Minnesota, has become assistant manager of the Central Creamery in Humboldt county. He resigned employment in the U. S. Experiment Station at Albert Lea, Minn., to look after practical operations in the Central creamery when Mr. A. Jensen came to San Francisco to establish an office here for the development of plants throughout the State. Mr. Sollie engaged in the creamery business in 1891 in Norway. He came to this country in 1900.

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Veterinary

Heart and Skin Trouble.

I have a mare apparently sound in every way, but I can occasionally hear her heart beat very distinctly. In fact one day I thought it was some one pounding on the barn with a rubber hose. She is strong and fat and does not get out of breath in traveling fast or going up hill. It does not seem to distress her. Does not occur often and only once has it been so loud as I have described.

I also have a mare that has a roughness of the skin of the breast and shoulders. Sometimes the hair comes off the top of these little elevations leaving small scars. She also has some places on her legs that look as though they might perhaps have been old kicks. Is she scrofulous?

The thumping you have noticed is due, I think, to a contraction or jerking of the diaphram and that the heart is in no way affected. It comes from some reflex nervous irritation that will take a closer inspection than I can make at this distance.

For the skin trouble clean off the scabs and wash with a solution of two ounces of Formaldehyde in one gallon of water. Give internally twice daily a tablespoonful of magnesia sulphate. This can be mixed with ground feed.—R. T. W.

Actinomycosis.

My bunch of cows have lumps on both sides of head near ears, also lumps near throat. Have cut some open and find but little matter.—A. T. H., Turlock.

The cows have probably got Actineomycosis or lumpy jaw as it used to be called, produced by the Ray fungii which finds its way into the lymphatic glands and sometimes into the jaw bones themselves. The treatment is one-half ounce of Potassium iodide daily. Have one pound of potassium iodide dissolved in one quart of water and give two drams of this solution twice daily.

It may be given in the feed or poured down the throat. If the lumps have not diminished in size at the end of a month get one-half the amount and continue the treatment, this is almost a specific.

Colts Cough.

My colt has cough and runs at nose. Is especially troublesome at night.—Subscriber, Bakersfield.

Have the following made up and give one-half ounce three to five times daily. It can be injected into the throat with a long nozzle metal dose syringe: Cottonseed oil, eight parts; kerosene, one part; Eucamphol, one part.

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These are not ordinary mixtures but are from well tried formulas, used in an extensive practice in Southern California for nearly a quarter of a century. Dr. Whittlesey's Sulphur Arsenical Salve for deep fistulous or ordinary chronic, indolent sores such as. "Poll Evil," "Fistulas," "Quitters," "Thrush," "Scratches," "Warts," "Collar Sores" or "Sit-fasts," $1.00 per package postpaid. Printed directions. Dr. Whittlesey's Antiseptic Healing Powder forms a coating over raw surfaces, excludes air, flies and floating germs. Makes a cheap and convenient dressing for the many sores that occur to stock on the ranch. $1 full pound can postpaid.

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SAMPLES—Take surface sample from first foot: subsoil from between 2½ and 3½ feet depth; deep subsoil from between 7 and 8 feet depth. One pound is enough for a sample if well mixed before divided down. PRICES—These prices are in force [illegible] while advertised.

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General Agriculture

GOOD ROADS.

Good roads mean progress and prosperity, a benefit to the people who live in the cities, an advantage to the people who live in the country, and it will help every section of our vast domain. Good roads, like good streets, make habitation along them most desirable; they enhance the value of farm lands, facilitate transportation, and add untold wealth to the producers and consumers of the country; they are the milestones marking the advance of civilization; they economize time, give labor a lift, and make millions in money; they save wear and tear and worry and waste; they beautify the country—bring it in touch with the city; they aid the social and the religious and the educational and the industrial progress of the people; they make better homes and happier hearthsides; they are the avenues of trade, the highways of commerce, the mail routes of information, and the agencies of speedy communication; they mean the economical transportation of marketable products—the maximum burden at the minimum cost; they are the ligaments that bind the country together in thrift and industry and intelligence and patriotism; they promote social intercourse, prevent intellectual stagnation, and increase the happiness and the prosperity of our producing masses; they contribute to the glory of the country, give employment to our idle workmen, distribute the necessaries of life—the products of the fields and the forests and the factories—encourage energy and husbandry, inculcate love for our scenic wonders, and make mankind better and broader and greater and grander.

The plain people of the land are familiar with the truths of history. They know the past. They realize that often the difference between good roads and bad roads is the difference between profit and loss. Good roads have a money value far beyond our ordinary conception. Bad roads constitute our greatest drawback to internal development and material progress. Good roads mean prosperous farmers; bad roads mean abandoned farms, sparsely settled country districts, and congested populated cities, where the poor are destined to become poorer. Good roads mean more cultivated farms and cheaper food products for the toilers in the towns; bad roads mean poor transportation, lack of communication, high prices for the necessaries of life, the loss of untold millions of wealth, and idle workmen seeking employment. Good roads will help those who cultivate the soil and feed the multitude, and whatever aids the producers and the farmers of our country will increase our wealth and our greatness and benefit all the people. We can not destroy our farms without final decay. They are today the heart of our national life and the chief source of our material greatness. Tear down every edifice in our cities and labor will rebuild them, but abandon the farms and our cities will disappear forever.

When the agricultural production alone of the United States for the past eleven years totals $70,000,000,000, a sum to stagger the imagination, and it cost more to take this product from the farm to the railway station than from such station to the American and European markets, and when the saving in cost of moving this product of agriculture over good highways instead of bad would have built a million miles of good roads, the incalculable waste of bad roads in this country is shown to be of such enormous proportions as to demand immediate reformation and the wisest and best statesmanship; but great as is the loss to transportation, mercantile, industrial, and farming interests, incomparably greater is the material loss to the women and children and the social life, a matter as important as civilization itself. The truth of the declaration of Charles Sumner fifty years ago, that "the two greatest forces for the advancement of civilization are the schoolmaster and good roads," is emphasized by the experience of the intervening years and points to the wisdom of a union of the educational, commercial, transportation, and industrial interests of our country in aggressive action for permanent good roads.—Congressman Sulzer of N. Y.

REPEAL LAW PROTECTING TREE SQUIRRELS.

Tree squirrels, which are now protected by law, are great enemies of conservation, so a movement is under way to have the next legislature repeal the protective statute allowing a hunter to kill only twelve between August and January.

State Forester G. M. Homans is in receipt of a letter from R. H. Charlton, Forest Supervisor of the Angeles National Forest, in which he gives instances of the harm inflicted upon the future forests of the state.

The Federal Forestry man speaks of the squirrels in the following language:

"I have just returned from a trip through the mountains where the question of having a closed season on tree squirrels was very forcibly brought to my attention. At present the law closes the season from January to August, inclusive, and during the open season stipulates that but twelve may be killed by any one party.

"It is very apparent that these squirrels are causing all sorts of damage. In fact, on the Skyland ranger district, there is hardly a tree that has not got its pile of chewed up cones beneath it and I believe that annually they destroy the chances of millions of young trees in the state. They are first-class nuisances, and by reason of their protection, of late years are increasing very rapidly. I note that up in the timber belt the woods are full of them, and if we continue to protect them it is only a short time until they will overrun us.

"Thought I would call this to your atention so that in case you agree with me you might be able to use your influence in the next session of the legislature to have this law changed. I believe there should be no closed season and let people kill as many as they want to and that sentiment in regard to them should be waived."—Sacramento Bee.

THE ENGLISH SPARROW.

The English sparrow is looked upon by the Minnesota state Entomologist at the Experiment Station as a menace to farmers, not only destroying grain, but also driving away useful birds. The division of entomology suggests that a very humane way of destroying them is to feed them wheat for a few mornings in the winter, in a straight line, in yard or field, and when the birds have become accustomed to the system rake the line with a gun loaded with fine shot. Wheat, it has been said, may be soaked in whiskey and eaten by the sparrows inducing such intoxication that they may be picked up and killed. Destroying sparrows' nests several times in succession, as they were rebuilt, has discouraged nesting in the locality. Destruction by means of active poisons is not recommended by the division because the dead birds are eaten by cats, poultry, etc. The entomologist has discouraged their roosting during the winter under the eaves of his own home and defiling the building, by the use of a small collecting pistol of fine shot, shooting them off their perches at dusk.

The purchase of $100,000 worth of orchard lands at Fargo, Oregon, is recorded. The Fargo Orchard Company bought $40,000 worth of property and invested $60,000 with C. A. Baker. This is one of the largest individual orchard deals ever recorded in that state.

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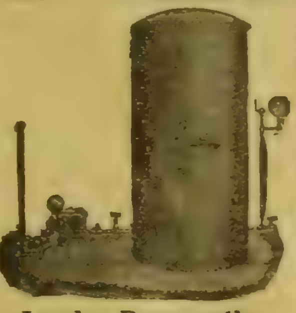

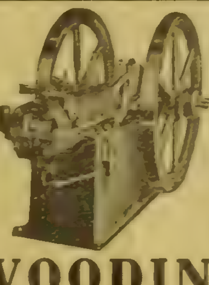

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Reference: Any Poultry Paper in the West

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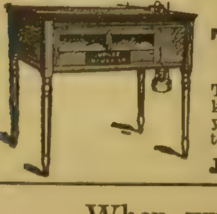

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Queries and Replies

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Grafting Walnuts.

Can wild walnuts growing in this country be grafted over to English walnuts? These trees are not the true black walnut, but they are surely of the walnut family. Can you give me name of some one who has successfully grafter walnuts who would give me information.—Subscriber, Tulare.

If these are the so-called "California Blacks" they can certainly be grafted over to the English. It has been done repeatedly and where proper conditions have been observed, most successfully. We are told that in Sacramento county rows of shade trees originally California Blacks have been grafted in this way. It would be very hard for one to get information as to method of grafting except by observation and even practice. A bulletin on "The Walnut in the North" can be had by writing to State Horticultural Commissioner Jeffrey at Sacramento.

Splitting of Peaches.

I am sending by this mail two peaches and some almonds. The pits of the peaches remain solid but the flesh splits along the "seam" before ripening. Some plums and apricots do the same thing, but not to the same extent as the peaches. The almonds show splitting of the hull much the same as the flesh of the peaches.—Subscriber, Greenfield.

These peaches showed flesh opening clear to the pit, a condition different from any we have observed. It is doubtless due to a physical change due to weather or other influences. To be sure that no diseased condition existed the specimens were referred to Dr. J. Eliot Coit, Acting Superintendent of the Southern California Pathological Laboratory, and he writes:

"We are unable to find any disease or fungus to which this injury could be attributed. I am inclined to think that it must have been caused by some physiological condition or unusual factor in connection with irrigation. At any rate it would be necessary to make a personal investigation on the ground, as there was nothing in connection with the material sent from which we could judge the cause of the trouble."

Millet.

I send seed of grain or grass which some have thought was millet; others said it was sorghum. Will you please name it?—Subscriber, Piru.

This was plainly some form of millet, but to secure the exact name it was referred to the State University. Prof. H. M. Hall writes: "The grass submitted for determination is the broom corn millet (Panicum miliaceum.)"

Bone Meal.

Where may I buy bone meal for plants?—Subscriber, Gridley.

Any seed and plant house should be able to supply you and you should have fertilizer dealers in your own section who can furnish it to you.

White Scale.

Am sending in box insect infected twig from orange tree. What is it?—C. A. S., Rudley.

The cottony, fluted insect is the White Scale or Cottony Cushion scale, or more properly Icerya purchasi, once considered one of the worst pests of the citrus orchards of California. It was brought under control by its natural enemy, Novius cardinalis, which is more popularly known as Vedalia. You can probably secure a colony to liberate on your trees by writing the State Horticultural Commission, Sacramento. If not spraying with kerosene emulsion, or better, fumigating will bring under control.

Hard to Dry Off.

I have a cow that is very hard to dry off. She is within a month or six weeks of calving now and still would give two gallons at a milking if I milked her dry. Have been trying to dry her for three weeks. Instead of decreasing the flow it is increasing owing to a little better pasture.—M. A. K., Holtville.

This cow should be milked and carefully fed. She is a good animal. The highly bred milk cow often does not go dry at all for years. I have one cow's record of twelve years continuous milking and fourteen calves dropped during the time. The milk will often be perfectly good but sometime a week before calving grows salty. We make a rule to use the milk the last four weeks to feed the other animals as it might be objectionable in the rest of the milk.—M. E. S.

Taming the Bull.

How shall I tame or rather prevent becoming cross a fine H. F. bull? Is one year old and is beginning to be mean to horses and men.—A. G. C., Turlock.

I do not believe I would ever attempt to make a bull gentle. It is not worth the trouble. Control him by using a strong halter on his head with a center snap to the ring in his nose. Always use a bull staff to lead him, hooking it into the ring. Make him a good sized corral to live in and leave him there. More youngsters in California are ruined as to temper by letting them run with the herd and then wondering why they become cranky. As to safety I really think that an animal known to be mean does less harm than one of the real gentle pets. They are the ones that should not be trusted.—M. E. S.

Belgian Hare Book.

Where can I get book on care of Belgian hares.—Subscriber, Watsonville.

We do not know of any in print now, unless it be one published by the New England Belgian Hare Co., 299 Washington St., Boston.

Jelly from Cactus.

I make jelly from cactus much the same as from other fruit. However, as the taste is rather flat when used alone I take tart apples, boil, strain and add to cactus fruit juice, using about one large tart apple to two quarts of cactus. Add sugar in same proportion as to other fruit juice. Do not use red apples as they do not make a clear jelly.—L. Dumke, Gardena.

Centrifugal Pump.

I own a walnut grove in the Santa Clara valley that has to be irrigated, necessarily by well and pump. In my section this is done by sinking or digging a pit 6x8 or 8x10 feet, 35 to 45 feet deep. Then to insure a permanent supply of water there is bored from the bottom of the pit wells 75 to 100 feet deep. A centrifugal pump is placed at the bottom of the pit connected by shaft to power at top of pit. During the wet season and later when there is a good supply of water the pump is frequently submerged and run under 5 to 10 feet of water, which in case of breakage or the disarrangement of any part of the pump renders repairs almost an impossibility. Also in a few years the casing of the pit begins to rot and deteriorate rendering repairs difficult to make. Is there any system of pump and well that is reliable, satisfatorcy, and reasonable in cost, that will not require a pit, can be operated equally cheap, with all machinery at the surface?—L. G. H., San Diego.

Nothing will be as satisfactory as a vertical centrifugal pump of high efficiency set at the bottom of a pit. The pit should be walled with brick laid in good cement mortar, making the excavation large enough to have the pit 6 feet 6 inches in the clear when walled, or large enough to allow pump and suction pipes to lift clear. The pit should also have a cement bottom of at least six inches in thickness, well cemented to the walls and around the wells. If the pump is to run under water part of the time both pump and shafting can be attached to a heavy frame which can be raised in case repairs are needed. Bricks laid in cement can be so placed around the bottom of each side of the frame that it can be lifted and replaced in its proper position while water is in the pit. Anchor bolts will not be needed to hold the frame down and side braces will not be necessary if all has been properly placed in line.—J. B. N.

Quantity of Water.

Which of the two following irrigation systems furnishes the greater amount of water per season and how much more is that amount than the other?

1. Irrigation system A delivers a constant flow of one and one-quarter inches of water from April 15th to November 15th for 10 acres of land.
2. Irrigation system B delivers one foot of water per acre per season between April 1st and October 1st.—Subscriber Hemet.

April 15th to Nov. 15th = 214 days, 1¼ miners inches, constant flow (law of March 23, 1901) equals 567,901 cubic feet, in the 214 days; 1¼ miners inches (common usage) 214 equals 454,521 feet. One acre foot on 10 acres equals 435,600 cubic feet. The constant flow gives the most water in either case but will necessitate a reservoir, while in the latter case the water might be delivered in such quantity that a reservoir would not be needed.—J. B. N.

Little Grapes.

I send small bunch of grapes. Some are of small size and ripening, others much smaller than peas and not offering to mature at all. Many vines in this section are similarly affected. —Amateur, Morganhill.

Physiological conditions of vine growth cannot be explained readily, even when one is able to study the conditions of soil and culture over the entire season. This season has shown many new things in vine behavior right here in this old vineyard country. The growers are calling the trouble "vine paralysis." The crop of grapes is short the world over this summer. These conditions of "little berry" we had some ten or twelve years ago quite marked, then they passed away. I again noticed the large number this season among the culled fruit at the packing house.

No, I could not tell anything about the fly on the bean blossom. It may be on old friend or a new foe. Dusting lightly with air slaked lime mixed with road soil, one part of lime to four of dust is a favorite remedy in the vegetable garden. Prof. Woodworth told me that a man could discover new insects every day in the week, for only those injurious and those of striking beauty have really been studied.—M. E. S.

Poison from Sorghum.

I have a large field of sorghum which was planted in a field from which I cut a crop of barley hay, and since irrigating it recently a fine stand of volunteer barley is coming up. I would like to use this for pasture during the early winter after the sorghum is cut. Would there be any danger to cows from poisoning if the sorghum was cut close to the ground? I have fed lots of the sorghum but never had any experience in just this way.—Subscriber, Pixley.

We would have no hesitation in pasturing as suggested, but we have no advice for others. We believe cases of poisoning have been reported but these are so few and far between as to amount to little as a risk. We would refer the inquirer to Mrs. Sherman's answers to similar queries in previous Cultivators. Of course it goes without saying that care should be exercised in turning stock into green feed, that they are not allowed to bloat.

Money Making Little Liners

In this department we will insert your advertisement under a classified head for 1½ cents per word per issue. No ad accepted for less than 25 cents. Our classified columns are the clearing house for our many thousand readers.

WANTED.

Farm Manager—Covering years of practical and scientific dairying, sanitary and certified milk, grade and registered stock, East and West, is open for similar position. Or, if preferable, would consider proposition to hire your farm for term of years, on share or cash rental, if carrying 50 to 150 deep milkers, tools, etc.; sterling references. Address Manager, Box 34, Parker, Arizona.

Wanted—Your work pays the expense to learn a trade that pays $5 a day, in a few months' time; electricity, automobiles, plumbing, bricklaying; actual contract jobs; 200 students last year. United Trade School Contracting Company, 647 Pacific Electric Bldg., Los Angeles, Cal.

Wanted—Man and wife to work on an orange orchard. Man to work in the orchard and wife to cook for three or four men. Each must be competent in their line of work and come recommended. Good wages and steady place for the right parties. Apply to R. D. Williams, Exeter, Tulare Co., Cal.

Wanted—Washington Navel and Valencia Orange, and Eureka Lemon trees. State quantity you can supply, also sizes and lowest price. Address P. W. Cheney, 312 Byrne Bldg., Cor. 3rd and Broadway, Los Angeles, Cal.

Help Wanted—We want several good solicitors to solicit for a high class suburban monthly publication. Good profitable employment to the right party. For particulars address Box H, Cultivator Office, Los Angeles.

Wanted—To lease on shares from 30 to 100 acres good alfalfa ranch with plenty water and good buildings. Address A. Bader, General Delivery, Pasadena, Cal

MACHINERY.

For Sale—Second-hand windmills, tanks, engines and farm machinery that will do the same work as new at half price. 8 ft. Steel Aermotor, tower, 1500 galvanized tank and stand and pump complete, $48; also many others. Small distillate tanks, 50 gallons up. Domestic and irrigating tanks, 500 gallon up to 50,000. 1½ brand-new engine and centrifugal pump, $65; 4-H.P., $75; 6-H.P. and 20-H.P. Fairbanks, 9, 10 and 23 H.P. engines, fine shape. Special bargain, 2-12 H.P. complete pumping plants, Fairbanks and Lambert with deep well Ames double-acting pumps complete, pumping 20 inches water now, at $350; 2-H.P. steam boiler and engine; complete wood sawing outfit, mounted on iron trucks with 9-H.P. engine, complete for $225. Baler, header; gang, disc, road, riding, and walking plows; cultivator, feed rack, wagon tank, fruit crusher, bone grinder, pipe, Fresno and Slip scrapers. Most anything a rancher wants second-hand. Demmitt Co., upstairs, 120 N. Main St., Los Angeles, Cal.

For Sale—38-H.P. Distillate Engine, thoroughly overhauled; price, considering excellent condition, very low. Will guarantee for a year. Bailie & Brandt Co., 943-945 N. Main St., Los Angeles, Cal.

For Sale—2-H.P. Fairbanks-Morse Jack-of-all-Trades Engine, with or without jack attached. Just as good as new, but much cheaper. Machinery Exchange, Main and Bruno Sts., Los Angeles, Cal.

TREES.

Fine Large Eureka Lemon and Valencia Orange trees, fine for replanting. Choice lot of fine Washington Navels. Order quickly. They are going. Home 'phone 1731. John R. King, Whittier, Cal.

Fruit Trees—Get our advance prices. Choice 4-inch pot roses, 15c. Our tree specials won't last long. Get wise. Ballou's Nursery, Pasadena, Cal.

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For First-Class Valencia and Navel Orange trees and Eureka lemons, see A. G. Snow, Oxnard, Cal.

LIVE STOCK.

Registered Jerseys—I offer for sale a 3½ year son of Golden Fern's Lad, and a yearling grandson. Will also sell a 3-year Brown Bessie cow bred to above son, for $100.00, sound except one undeveloped teat. Henry H. James, Fair Oaks, Sacramento Co., Cal.

Milch Goats—Young three-quarter Toggenburg, extra fine buck and several does, hornless beauties. For sale. B. A. R. Stocker, San Luis Obispo, Cal.

Registered Shorthorn Bulls and Poland China Hogs for sale. Best breeding. P. H. Murphy, Perkins, Cal.

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Wanted—20 acres of raw land with water right, suitable for alfalfa, in coast counties. Small improved place would be considered. H. Turner, Greenfield, Cal.

Hayes, R. B., Poultry Fancier and Rhode

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Milk Coolers, Bottles, Caps, brushes, Buhl milk cans, Sharples separators, Babcock testers, veterinary instruments, wood soled boots and shoes, and our celebrated "Prosperity" washing powder. Guy F. Kelsey, 108 E. 8th St., Los Angeles, Cal.

OLIVE GRADER

Wanted—Small olive grader in good condition. State make, size and price. O. S. Davis, Corning, Cal.

FARM LANDS FOR SALE.

For Sale—Los Angeles' new water supply from the Owens River Valley opens up the most fertile land in all Southern California. This land is wonderful in its productiveness beyond belief. Potatoes that run as high as 500 bushels to the acre with an average of 330. Alfalfa 3 tons to the cutting. Timothy with 12-inch heads. Corn 70 bushels to the acre. Famous for onions and hogs. The world's prize at Portland Exposition for honey. The finest apples grown on the Pacific Coast, Spitzenburgs and Wine Saps being the favorite varieties. No better poultry country in California. No other land in California to compare with it. Foothill land with gentle slope, giving perfect drainage. One of the most complete gravity concrete water systems in the State now being installed by men whose irrigating systems in the orange belt of Southern California stand as models for modern orchard irrigating. Water from the hundreds of lakes in the high Sierras. An inexhaustible and assured supply. The Southern Pacific's new main line to the East, now nearing completion, places this valley in close touch with all markets. The choicest apple land will be subdivided into tens, twenties and forties. The elevation is 4000 feet. Typical California summers with no excessive heat and cool and restful nights. Mild winters with thermometer at 10 degrees above being the coldest. Practically no rain, about four or five inches during the entire year. Three hundred days of sunshine. Absolutely no fog. The finest scenery in America. The high Sierras at your very door. Trout streams within walking distance. You can leave the Valley in the morning, go to the summit of the Sierras, 11,000 feet elevation, pass a dozen beautiful mountain lakes and return to your home the same evening. Special inducements to early settlers. This land is not for speculators, but for real serious farmers who know the value of good land, water and climatic conditions when they see them. Will send kodak pictures and full descriptive matter upon application. JAMES R. H. WAGNER and H. S. COOK, Room 13, 329 South Hill St., Los Angeles, Cal.

For Sale—20 acres. I absolutely guarantee to you (and will place in escrow money to cover your traveling expenses while making an examination, said money to be paid you in case of misrepresentation) that this 20 is the finest garden silt and level as a floor. With this 20 go 20 shares water stock in a co-operative irrigation system and the water is now delivered to the land. Located in the midst of a prosperous and thickly-settled Tulare county colony, where intensive cultivation and dairying are paying well. 4 miles to railroad station, 2 miles to town. Neighbors next door, near churches, $10,000 school, stores, etc. You can't duplicate this 20 for $100 an acre anywhere in the San Joaquin valley, but I will sell it for considerable less if taken at once. F7764. John W. Thompson, 522 S. Main.

For Sale—40 acres of land planted to beans and corn. About 8 acres of grown Eucalyptus timber, 3 acres in family orchard, windmill, tank, barns, 13 chicken houses, brooder house, everything necessary to run four or five thousand hens. New wagon, 2 good horses, buggy, plows, cultivator, within 4 miles of Santa Maria oil fields. 5-room house, nicely shaded with pepper trees. A good opening for a young couple. Price $4,000. Apply to W. J. Webb, Owner, Santa Maria, Cal.

For Sale—Are you looking for a Southern California alfalfa ranch? Investigate mine. It is near Riverside, in genuine alfalfa district. Fine pumping plant; part already in alfalfa; some land graded and entire tract of 240 acres can be set. All conveniences; in fact, this is really suburban property. Will sell for less than any similar Southern California alfalfa proposition can be bought for. F7764. John W. Thompson, 522 S. Main.

For Sale—A 20-acre farm for $20 cash and $20 a month; possession now; $90 to $125 per acre; your crops pay for the land. Rich, level land for alfalfa, oranges, almonds, grapes, cows, chickens; abundance of ditch water, for irrigation, for $1 an acre a year. Where else can you get this? In Oakdale Colony, near good town and railroad station, climate delightful. T. Wiesendanger, 207 S. Broadway, Los Angeles, Cal.

Fresno County—For sale, 320 acres; 160 alfalfa, 160 Muscat vines; fenced, cross-fenced, 1000 tons of alfalfa this year, 60 tons raisins, abundance cheap water, fine buildings, implements, 8-ton wagon scale; show profit 20 per cent, can make 30 per cent. Can subdivide. E. E. Bush, 805 Union Trust Bldg., Los Angeles.

For Sale—815 acres in San Luis Obispo County. A typical dairy ranch. Plenty of wood, water, irrigable land, buildings, fenced and cross fenced. Orchards, vineyards, oranges, lemons and walnuts do exceedingly well here. Forty acres of land suitable for these. Price $21 per acre. For further particulars apply to Mrs. F. A. Clink, Pozo, Cal.

Irrigated Land For Sale, Cheap—In the Lower Rio Grande Valley of South Texas. Ideal climate. Good markets. Large crops. Special inducements to several practical irrigation farmers. Address Manager, American Rio Grande Land & Irrigation Co., Mercedes, Hidalgo County, Texas.

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White Orpingtons—[illegible] strain. We offer for sale a [illegible] number of trios and pens of utility and exhibition stock at bargain prices for the summer season. Our breeding pens are imported direct from Wm. Cook & Sons, Scotch Plains, N. J., and are sons and daughters of first and second prize winners, Madison Square Garden. Messrs. Cook & Sons say of them: "They are all from some of the finest birds in this country." Book orders now for next season's hatching. Eggs $5.00 per 15. $25.00 per 100. Day-old chicks 50c each. October delivery. Rancho La Solana, Box 143, Chula Vista, Cal.

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Poultry Wanted—We pay the highest market price for all the local poultry we can get, no matter how large the quantity; also fresh ranch eggs. We remit immediately. Allaway & Layton Co., 607 E. 3d St., Los Angeles, Cal.

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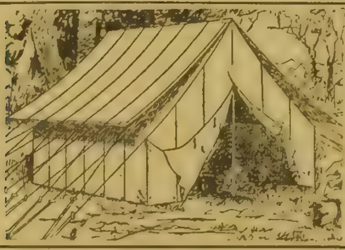

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Household Department

THE RAGGEDY DOLL.

When the nursery blinds are all fastened and tight,
When the curtains are drawn and it's not at all light,
When my mother has kissed me and hurried away
And I hear them downstairs, very busy and gay—
Then the raggedy doll in her calico dress
Comes creepity creep from the nursery press.
She remembers I'm little and lonely, I guess.

O, she never comes out through the sunshiny days,
The fellows and I don't use dolls when we play,
But she waits till the football and bat are asleep
And she picks up her skirts and comes creepity creep,
Does the raggedy doll in her raggedy clothes
With holes in her elbows and holes in her toes
And her sawdust all dripping wherever she goes.

Then the grizzly black bear who hides back of the door
Goes a-slinking away, and the imps on the floor
Who chatter and point till I cover my head
Go a-scampering off. There's quite nothing to dread
For the raggedy doll waves a raggedy arm
To keep little Me safe from all harm
And she climbs in the crib and lies down, soft and warm.

O, what if she's dirty and really a sight
And exceeding old! She's my comfort at night
With her battered old head close to my head. Have you
A raggedy doll just as loving and queer,
But quite sure to be round when you need some one near?

—Carolyn S. Bailey.

THE HORSE'S PRAYER.

To Thee, My Master, I offer my prayer: Feed me, water and care for me, and, when the day's work is done, provide me with shelter, a clean dry bed and a stall wide enough for me to lie down in comfort.

Always be kind to me. Talk to me. Your voice often means as much to me as the reins. Pet me sometimes, that I may serve you the more gladly and learn to love you. Do not jerk the reins, and do not whip me when going up hill. Never strike, beat or kick me when I do not understand what you want, but give me a chance to understand you. Watch me, and if I fail to do your bidding, see if something is not wrong with my harness or feet.

Do not check me so that I cannot have the free use of my head. If you insist that I wear blinders, so that I cannot see behind me as it was intended I should, I pray you be careful that the blinders stand well out from my eyes.

Do not overload me, or hitch me where water will drip on me. Keep me well shod. Examine my teeth when I do not eat, I may have an ulcerated tooth, and that, you know, is very painful. Do not tie my head in an unnatural position, or take away my best defense against flies and mosquitoes by cutting off my tail.

I cannot tell you when I am thirsty, so give me clean, cool water often. Save me, by all means in your power, from that fatal disease—the glanders. I cannot tell you in words when I am sick, so watch me, that by signs you may know my condition. Give me all possible shelter from the hot sun, and put a blanket on me, not when I am working, but when I am standing in the cold.

I try to carry you and your burdens without a murmur, and wait patiently for you long hours of the day or night. Without the power to choose my shoes or path, I sometimes fall on the hard pavements which I have often prayed might not be of wood, but of such a nature as to give me a safe and sure footing. Remember that I must be ready at any moment to lose my life in your service.

And finally, O My Master, when my useful strength is gone, do not turn me out to starve or freeze, or sell me to some cruel owner, to be slowly tortured and starved to death; but do Thou, My Master, take my life in the kindest way, and your God will reward you here and hereafter. You will not consider me irreverent if I ask this in the name of Him who was born in a stable. Amen.—Dumb Animals.

YOUNG WIVES AND HUSBANDS.

"If every pair for whom wedding bells are to ring this June," says Margaret Sangster in Woman's Home Companion for June, "would take to heart the thought that their private affairs are their own, not to be told to outsiders and not paraded to the world, they would insure and safeguard their self-respect and the permanence of their home. The temptation may arise when first there is a little friction to seek sympathy from mother, sister or intimate friend. That temptation should be trampled under foot. Confidential friends are not invariably to be trusted. With or without the best intention the third party intruding in the affairs of a married couple is in peril of making mischief. Make it a rule to confide wholly without secrets or reserve in one another from the hour that you become husband and wife, and you will have little to fear, though the four winds should blow around your house. It will stand against any tempest and prove itself strong and hallowed, your sanctuary and your castle if you confide in and defend your sacramental union. Never let a quarrel last overnight. Present a brave front to the world. There is common sense in the homely advice to put the best foot forward. Don't begin by thinking that you must have everything on the same plane with your neighbors. Live within your means, although your living be the simplest. Try to save a little each week or month toward coming days when expenses may be larger. Much comfort is theirs who are aware that they have laid aside a provision against accident, illness or an unlooked-for occasion. May heaven bless the young married folk who set forth together in this year of grace. May they live to celebrate their golden wedding and live together, loved and honored, years after that splendid meridian."

ON NAGGING.

My son taught me a lesson on the subject of "nagging" when he was but four years old, and one that I have never forgotten. He had been guilty of a small misdemeanor and had tried to wriggle out of it by not telling the exact truth. I gave him a mild spanking; and, as has always been my custom, talked the matter over afterward. I began by saying, "Now, Robert, if you had told me the truth, I should not have punished you."

He stood before me scraping one foot along the carpet, and he looked up at me and said, "What would you have done?" and I answered, "I should have only talked to you." "Well," he drawled, "how long would you have talked?"

He is a big boy in high school now, but when times arise requiring a reprimand, and I get started, I still hear that little voice, "How long would you have talked?" and I go right to the point and say what I have to say on the subject. But, in the boy's own language, I "cut it short" and never refer to it again unless it is absolutely necessary.—Harper's Bazar.

CHOPPED PICKLES.

The following we clip from the Farm World. It surely isn't classic poetry, but it may be the making of a good pickle:

Of fresh green tomatoes
Take one-half a peck,
Two firm heads of cabbage,
(Cut out every speck).
Fifteen large onions,
And fifteen quite small,
Twenty-five cucumbers
Chop with them all.
Mix grated horseradish—
One pint you will need—
With one-half a pound
Of white-mustard seed.
Black pepper and cinnamon
Finely ground up;
Of each of these measure
Just one-half a cup.
One ounce of celery-seed
Add to this now,
And a half cup of turmeric
You'll need anyhow.

Chop these vegetables up,
Salt down for one night,
And in the morning
Squeeze them out tight:
Cover with vinegar
For two days, you know,
Then drain them and mix in
The spices that go.
Four pounds of brown sugar,
To make a bit sweet,
In six quarts of vinegar
Now you may heat,
Boil all together
Until you shall render
The whole to become
Sufficiently tender.

This receipt has been tested
With greatest success—
There never was given
A better, I guess.
Now, this is the truth—
If you don't agree,
I think that you'd better
Just try it and see!

APPLE RECIPES.

Bring a closely-packed layer of neatly quartered apples to the boil in a syrup composed of one cupful of sugar to two of water, with the juice of one lemon and six whole cloves; draw the pan to the side of the stove, shaking and basting occasionally with the syrup, which should not entirely cover the fruit; cook very slowly, and as soon as the fruit becomes a pale yellow on top, the underside should be of a golden brown; turn carefully with a broad-bladed knife and cook till both sides are glazed. Lift out into a flat dish and serve cold with cream. A large shallow granite pan is best for this process.

Put three and a half pounds of sour apples with half a pound of quinces, all pared and quartered, into a granite saucepan with two quarts of the best cider vinegar, a pound of tomatoes, one of tamarinds and one of dark brown sugar, with four ounces of salt; cook until thoroughly tender and pass through a coarse sieve. When cold, stir in thoroughly one and a half pounds of seeded raisins put through a fruit chopper, two ounces of ground ginger, one-fourth of an ounce of cayenne, two ounces of finely-minced garlic (for some, one ounce would be better), and four ounces of mustard seed. Seal in self-sealing jars.

A German guest at the same house gave me this receipt: Brown some quartered apples in butter; stick strips of almonds into them, cover with claret and water, half and half, add currants, sultana raisins and a stick of cinnamon, and stew until tender. Delicious cold.—A. C.

GREEN PEPPERS STUFFED.

Plunge into boiling water for two minutes one very small and three fine, large, sound green peppers. Remove and neatly peel them with a towel. Split the three large ones in even halves, lengthwise. Keep the smaller one as it is. Remove the seeds, nicely clean the pods, then fill with a stuffing prepared as below. Spread a tablespoonful of fresh bread crumbs over their surface. Lay them on a lightly buttered pan, place over each pepper a dot of butter, then set in a brisk oven for ten minutes, or till of a nice golden color. Remove, dress on a hot dish with a folded napkin, and serve. To make the stuffing, thoroughly heat a teaspoonful of butter in a small saucepan, add three finely-chopped, sound shallots and half an ounce of finely-chopped, cooked lean ham; lightly mix and gently cook for two minutes; sprinkle a teaspoonful of flour over, stir well for half a minute, then pour in a gill of demi-glace. After removing the seeds from the remaining small pepper, finely mince it up and ad to the pan with four finely-chopped canned mushrooms, half a teaspoonful of finely chopped parsley, and the meat of two raw sausages. Season with two saltspoonfuls of pepper and one saltspoonful of grated nutmeg. Mix all well together and cook for eight minutes. Remove the pan to a table, add three tablespoonfuls of fresh bread crumbs, thoroughly stir, then use as directed. —New York Globe.

TOMATOES.

Why not, instead of ordinary baked tomatoes, stuff them with the highly seasoned remnant of yesterday's meat or chicken put through a grinder and mixed with a cream dressing?

Another good stuffing is cold macaroni from which the sauce has been washed off, mixed with chopped green peppers. When the bread-crumb stuffing is used have you ever covered the top thickly with cream or Parmesan cheese?

The average fried tomato is unpalatable because it is floured to death. Try frying the raw sliced tomatoes in plenty of butter, to which a little lard is added to prevent burning. Cook slowly until done, then remove most of the tomatoes, add a little more butter rubbed with flour, and cream to make a thick dressing. If you do not mind the tomatoes being broken, they can be returned to this gravy, otherwise it is poured over them. Season highly.

TO REMOVE MILDEW.

To remove mildew, rub the article with soft soap, completely covering all the spots, then lay on the grass or hang up where the hot sun will strike it. In a few days wash out the soap and boil it. If you have missed any spots, repeat the process. This is a sure recipe and removed the mildew from a white dress for me when it was perfectly black with it and everything else tried was a failure.

Everything is as naught if, as we progress, we do not come closer together in a realization of opportunities for service to our fellows, and in appreciation of the extent of misfortune which may be prevented or relieved. The success which is indicated in the facility of communication, in the activities of markets and in the products of manufactures is important indeed; but its importance must be found ultimately in those other qualities which are represented in a growing solicitude for an improved condition and the real betterment of the great masses of the people. The thing we are proud of in America today is the enlarging area of opportunity, and the concern of those who have been favored by their talents or fortune for those less favored. This is the real pride of our national life.—Governor Hughes.

Some men thrash their horses for things for which they are not responsible.

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San Francisco and Los Angeles Produce Markets

Los Angeles Markets

LOS ANGELES, Sept. 28, 1910.

Butter.

Butter is the same as last week, though light receipts are making a very firm market. Only about 12,000 pounds were received yesterday.

Price to trade 2½c in advance of the following Produce Exchange Quotations:

Extras	.32½
Firsts	.31
Cooking	.25

Cheese.

Local	.18
Northern fresh	.17@17½
Ancher, large	.15
Oregon Daisy	.18½
Imported Swiss	.30
Domestic Swiss	.22@24

Eggs and Poultry.

The egg market is exceptionally strong with a 2 cent advance on both extras and case counts. Storage are being drawn on heavily.

Paying price f. o. b.. L. A. is:

Local ranch candled	.43
Case count buying price	.39
Seconds	.26
Eastern fresh	.35
Eastern Storage	.30@32

Dealers pay for live poultry f. o. b. L. A.:

Hens, per lb.	.16@18
Roosters	.8@16
Broilers	.17
Fryers and Roasters	.17@18
Turkeys	.24
Ducks	.16
Geese	.11
Squabs, per doz.	.1.50

Live Stock.

The following quotations are f. o. b. Los Angeles, on all stock:

Hogs, 175 to 200 lbs.	.9.60
Prime Steers	.5
Heifers	.4@4½
Calves, per lb.	.6½
Sheep ewes, per head, shorn	.4.00@4.50
Lambs, per head	.3.50
Wethers, shorn	.4.00@4.50

Potatoes.

Wholesale prices are:

Local Burbanks, ctl	.1.25
Highlands	.1.40@1.50
Salinas	.1.65
Sweets, Yellow, per ctl	.1.60@2.00

Onions.

Wholesale quotations:

Northern, ctl	.1.75
Yellow Danvers	.1.75
Australian Browns	.1.75
Silverskins	.1.25
Garlic	.7

Vegetables.

Wholesale quotations:

Asparagus	.15
Artichokes, northern, doz.	.85@1.00
Beets, sack	.99
Beans, green	.4@5
Beans, Limas	.5
Brussels Sprouts	.12½
Bell Peppers, lb	.6
Green Chilis	.5
Chili's, Dried	.25
Cucumbers, per lug	.40
Cabbage, per sack	.1.00
Celery, crate	.2.50
Cauliflower, per crate	.1.50
Carrots, per sack	.1.00
Egg Plant, per lb	.2@4
Green Corn, box	.60@65
Green Onions, per doz. bunches	.25
Lettuce, choice, per crate	.1.25@1.50
Leeks, per doz.	.40
Okra, lb.	.6
Peas, per lb.	.7
Parsley, per doz. bunches	.25
Parsnips, doz. bunches	.20@25
Radishes, per dozen bunches	.10@15
Rhubarb, crimson winter	.1.00
Rhubarb, No. strawberry	.1.50
Spearmint, doz. bunches	.30@35
Spinach, per dozen	.20
Hubbard Squash, lb	.2
Summer Squash	.50
Turnips, sack	.1.00
Water Cress, doz. bunches	.25@35
Tomatoes, lug	.40@50

Citrus Fruits.

Valencias	.4.00
Grapefruit	.2.00@3.75
Lemons	.4.00@5.00

Fresh Fruits.

Wholesale prices on the market are:

Aligator Pears	.3.50@4.50
Apples, Bellflowers	.1.00@1.10
Spiteznbergs	1.75
Jonathans	1.00
Gravensteins	.1.00@1.60
Greenings	.75@1.00
W. W. Pearmains	.1.00@1.25
Fall Pippins	.85@1.00
Pine Apples	.6@7
Casabas, doz.	.1.50
Cantaloupes, crate	.2.50
Figs, box	.75@100
Grapes, lug	.65@1.25
Grapes, Tokays	.1.25@1.50
Pears, box	.75@1.00
Bartletts	.2.00@2.50
Strawberries	.8
Raspberries	.10
Blackberries	.10
Peaches, box	.85@1.00
Plums, crate	.1.45
Quinces, lb	.2
Watermelons, lb.	.2

Dried Fruits.

Wholesale prices are:

Apricots	.12@13
Evap. apples, fy., per lb.	.8@8½
Peaches	.10
Pears	.10@12
Nectarines	.7½@9
Prunes	.5½@10
Plums	.11

Beans Dried.

Wholesale quotations:

Limas	.6.00
Black eyes	.5.00@6.00
Pink, No. 1	.6.50
Lady Washington	.4.50
Small white	.4.50
Garvanzas	.4.00
Lentils	.6.50

Nuts.

The Southern California Walnut Association fixed the following prices at its meeting last Monday:

Wholesale quotations are:

No. 1 soft shell walnuts	.15
No. 1 H. S.	.14
No. 2, all kinds	.11

,Grafted or budded an advance of 2½c.

Brazil nuts	.14
Filberts	.14
Almonds, IXL, per lb	.17@17½
Pecans, polished	.18
Peanuts, Eastern	.7@7½

Honey.

Wholesale quotations:

Extracted water white	.9
Extracted light amber	.7½
Comb W. W.	.18
Light amber	.15
Beeswax	.30

Hay.

Buying prices f. o. b. cars L. A. are:

Barley hay	.8.50@10.50
Alfalfa	.9.00@10.00
Wheat hay	.10.00@11.00
Tame oat	.10.00@12.00

Grain.

Wholesale selling price f. o. b. Los Angeles:

Wheat, new, per ctl.	.1.85@1.90
Corn	.1.75
Popcorn	.3.50
Kaffir corn	.1.75
Egyptian corn	.1.85
White oats	.1.85
Seed Rye	.2.00
Seed Barley	.1.30

Feed Stuff

Wholesale selling price f. o. b., Los Angeles:

Cracked Corn	.1.80
Cracked Wheat	.2.00
Shorts	.1.80
Bran	.1.55
Oil cake meal	.2.50
Feed Meal	.1.85
Rolled Barley	.1.15

San Francisco Markets

SAN FRANCISCO, Sept. 27, 1910.

Butter.

Butter advanced a half cent the day following last week's quotations and still stands at 31½ for extras. Market strong at that quotation.

The official quotations of the San Francisco Wholesale Dairy Produce Exchange for today are as follows:

California extras, per lb	.31½
California firsts	.29½
California seconds	.28
Storage	.30½

Cheese.

California flats, new	.15½
Cal. Young Amer. fy. new	.15½@17
Oregon, Fancy	.16½

Eggs and Poultry.

Eggs have advanced steadily and are now 2½ above last week's quotations and very firm at that. Several cases were sold yesterday at top quotations.

Official quotations of the S. F. Wholesale Dairy and Produce Ex. are:

Fresh ranch extras	.44
Firsts	.40
Seconds	.30
Storage	.30

Notwithstanding one car of holdover poultry and 3 cars arriving yesterday, market is steady.

Hens, per dozen	.4.50@10.00
Roosters, per doz.	.5.00@8.00
Fryers, per doz.	.4.50@5.00
Ducks	.6.00@7.00
Broilers	.3.00@3.75
Spring Turkeys	.26@28
Geese	.2.00@4.00
Goslings, pr	.2.00@3.00
Pigeons	.1.50@1.75
Squabs	.2.50@3.00

Live Stock.

San Francisco prices gross weight:

Steers	.3¾@5¼
Cows and heifers	.2¾@4¼
Hogs	.6@9¼
Calves per lb.	.4½@6
Milk Lambs, unshorn	.6@6¼
Wethers No. 1	.4½@4¾
Ewes No. 1	.4@4¼

Potatoes.

Wholesale market quotations:

River White, new box	.90@1.10
Salinas Burbanks	.1.45@1.60
Sweets, ctl.	.1.85@2.00

Vegetables.

Litle is doing in the vegetable market and free arrivals makes for weakness.

Wholesale quotations:

Artichokes	.25@40
Beans, string, per lb.	.2@3
Beans, Lima, lb.	.4@5
Cucumbers, box	.40@50
Celery, per crate	.90@1.50
Chili Peppers, per box	.25@40
Bell Peppers	.6@7
Green Corn, sk.	.75@1.00
Egg Plant, per box	.30@40
Lettuce, per crate	.4.50@5.00
Okra, box	.30@40
Peas, per lb.	.4@5
Rhubarb, box	.50@75
Summer Squash, box 25 lbs	.40@65
Tomatoes	.25@50
Garlic	.2½@3

Onions.

Onions, sk.	.1.00@1.10

Citrus Fruits.

Valencias	.2.50@4.00
Grapefruit	.1.50@2.00
Lemons	.2.50@5.50
Limes	.6.00@6.50

Fresh Fruits.

Apples, box	.50@85
Apples, Gravensteins	.1.00@1.25
Apples, Bellflowers	.90@1.00
Bananas, Hawaiian	.75@1.25
Cantaloupes, crate	.1.25@1.50
Muskmelons	.2.00@2.50
Nutmegs	.25@50
Figs, bo xsingle	.25@40
Grapes, seedless	.50@65
Grapes, Muscat	.40@65
Grapes, Tokays	.30@40
Grapes, wine, ton	.10.00@15.00
Huckleberries, lb.	.5@7
Pears. Winters	.50@85
Bartletts, wrapped	.1.50@2.00
Peaches	.25@40
Peaches, lugs	.50@75
Persimmons, box	.90@1.00
Nectarines, red	.40@90
Quinces, box	.50@85
Pomegranates, box	.50@65
Plums, crate	.50@75
Blackberries, chst	.6.00@7.00
Raspberries, chst	.5.00@6.00
Strawberries, chst	.4.00@5.00
Pineapples, doz.	.2.50@3.00
Watermelons, per doz.	.1.00@2.00

Dried Fruits.

Apples, 7@8¼c; Apricots, 10¾@13¼c; do, Moorparks, 14; Peaches, with premium of ⅛@¼c on Santa Claras, 5½@6¼c, with ½@¾c premium on 40s; Figs, 4¾@6½c for White and 4¼@4½ for Black; Pears, 9¾@13c.

RAISINS—1910 crop: London Layers, in 20-lb. bxs: 6-crown clusters, $2.25@2.50; do, 5-crown, $1.75@2.00; do 4-crown, $1.25@1.40; 3-crown layers, $1.05@1.15; do, 2-crown, 95c@$1.00. Seeded, per pkg.—Fancy, No. 16, 6@6¼c; Choice, No. 16, 5½@5¾c. Loose Muscatels in 50-lb. bxs—Standard, 4-crown, 5½@5¾; do, 3 crown, 4¾@5c; do, 2-crown, 4¼@4½c. Dried Grapes, 3@3¼c. Seedless—Muscatels, 3¾@4c; Sultanas, 4¾@5c; Thompsons, 5¼@5½c.

Nuts.

Walnuts, S. S. No. 1	.13½
Walnuts, hard shell	.13
Almonds '10 N. P. U.	.14½
Almonds, '10 Nonp	.16¼
Almonds, '10 I X L	.15½
Pecans	.14@15
Chestnuts	.14@15

Beans Dried.

Some on market say that the crop of Limas this year will be a million bag crop. Demand is brisk and market is strong.

Limas	.4.50
Pink	.6.50
Black eyes	.5.60@5.75
Small white	.3.90
Large white	.3.85
Kidneys	.6.75@7.00
Garvanzas	.3.25
Bayo	.5.50
Horse beans	.2.00
Red Mexicans	.6.00
Cranberry	.4.50@4.75

Hops

Hops, 1910 crop	.12@16
Hops, 1909 crop	.10@15

Honey.

W. W. Comb '10	.15
Dark Comb	.12½
Extracted W. W.	.8
Extracted, dark	.6½
Beeswax, per lb	.24@30

Hay.

Scott, Magner & Miller say:

We have received during the past six days 5000 tons of hay on the San Francisco market. There has not been much change to note in the situation, as prices have continued along just about as they have been, excepting on strictly fancy articles of hay.

The majority of all the hay that has been coming in is of the medium and ordinary varieties.

There has been no strictly fancy hay coming in to amount to anything recently, as the most of this type that was produced this year has gone into the barns in the country for storage, and will be drawn on gradually through the winter. Therefore, on account of so little having been offered here recently, this special type of hay is wanted by the retailers, and a little premium over current rates is offered this week.

In many sections the fields have been entirely cleared up, while in others where storage facilities are limited there is still quite a little in the fields. There has been somewhat of hay loaded on vessels during the past week for export.

Advices from Washington report that the contract of the United States government for 10,000 tons of hay for use in the Philippine Islands is to be ordered shipped from San Francisco. In view of the fact that the government authorities in Manila have been favorable to timothy for some time past, it is a matter for congratulation to California that their ideas have become changed so that it was made possible for California to again compete for this desirable trade. The placing of this order will have no bearing on the market, as the shipments are to be spread out gradually over many months.

Alfalfa hay continues firm at our quotations.

Fancy wheat	.12.50@13.00
No. 1 wheat or wh and o	.10.00@11.00
No. 2 wheat or wh and o	.9.00@10.00
Choice tame oat	.10.50@11.50
Other tame oat	.8.00@9.50
Wild oat	.7.00@9.00
Stock hay	.5.00@6.00
Alfalfa	.9.00@12.00
Straw	.40@50

Grain.

Wheat No. 1	.1.52½@1.57½
Barley, good to choice	.$1.00@1.03¼
Barley, fancy	.1.05
Barley, poor to fair	.95@97½
Oats, white	.1.55@1.60
Rye, new crop	.1.65@1.70
Corn, large yellow	.1.55@1.60
Alfalfa seed	.14@15
Mustard brown	.4½
Millet	.2¾
Flaxseed	.5@5½
Broom corn seed, per ton	.23.50

Feed Stuff.

Bran, per ton	.27.00@30.00
Feed cornmeal, per ton	.36.00@37.00
Cracked corn	.36.00@37.00
Ground barley, per ton	.22.50@25.00
Rolled oats, per ton	.29.00@31.00
Middlings	.32.00@35.00
Oil cake, per ton	.40.00@41.50
Cocoanut cake per ton	.25.00
Mixed feed, per ton	.24.00@27.00
Shorts	.29.00@32.00

Deciduous Market

SACRAMENTO, Sept, 24th, 1910.

The following circular of the California Fruit Distributors gives number of cars of deciduous fruit shipped from all points in California for the week (7 days) ending Friday morning, September 23rd, 1910:

Peaches.

Fifty-nine cars. Very few peaches are still left to go forward. Shipment will probably entirely end this coming week.

Pears.

Eighty-five cars. The pear shipment appears much heavier this week than is really the case. Forty-five cars should have been reported before, but owing to an oversight in the railroad office same were not reported. The actual movement of pears this week should be 40, therefore, instead of 85 as appears from this report. Very few cars are still available for shipment and of these few most of them have already been sold on orders booked for some time since.

Grapes.

Three hundred and sixty-eight cars. The grape movement this week shows a falling off of practically 130 cars from the shipment of last week. It is expected that shipments will not increase materially above the figures of the past week. There are still a few Malages being offered, but not many. Cornichons and Emperors are generally being held back to allow the completion of the Tokay movement.

Weather conditions have remained exceedingly favorable since our last report.

Citrus Market

LOS ANGELES, Sept. 28, 1910.

Valencias are still commanding good prices for all good stock. Even the off siezs are doing fairly well with "drys' dragging.

Lemons are strong in every section of the country. Every offering of good fruit is instantly picked up at satisfactory prices.

Shipments.

Citrus shipments to date since Nov. 1, 1909, 29,405 cars, of which 24,829 were oranges and 4576 lemons. To same date last year 37,083 cars, of which 31,077 were oranges and 6006 lemons.

NEW YORK, Monday, Sept. 26th.—Up to time of closing the retail report was not received.

VALENCIAS—	Avge.
Butterfly, Cov. Ex., Cov.	$2.75
Pointer, ACG, Azusa	2.45
Commercial, ST. Ex., Fullerton	4.70
Teal, Cov. Ex., Covina	2.30
Hunter, ACG Ex., Azusa	1.75

CHICAGO, Monday, Sept. 26.—Lemons—A satisfactory trade is reported. The offerings are not large and the market is in a healthy state. Boxes, California choice, $4.75@5.00; extra choice, $5.25@5.50; common, $4.

Oranges—Oranges are in but moderate supply and the outlook is for continued firm offerings. A firm feeling exists. Boxes, late Valencias, extra choice, $4.25@4.50; choice, $3.75@4.00; grapefruit, Florida crates, $4.00@5.00.

BOSTON, Monday, Sept. 26.—Seven cars sold. Weather warm. Market strong on oranges, easier on lemons.

VALENCIAS—	Avge.
Squirrel, AH Ex., Prenda	$2.25
Robusta No. 1, AH Ex., Pachappa	4.10
IXL, Fy, Benchley Fruit Co.	6.15
Orchard, OR, Nat Og Co.	3.45
Camelia, XF, Red Mut Og Co.	2.75
Redlands Pride, XC, Bryn Mawr	2.25
LEMONS—	**Avge.**
Mission, ST Ex. Santa Barbara	$5.20
Selected, Fy, CH, N W Blanchard	5.85
Festival, ST Ex, S. Barbara	4.70

GRAPEFRUIT—Standard, $4.25; Orchard halves, $3.30.

ST. LOUIS, Monday, Sept. 26.—Raining. Market firm on good stock. One car Valencias and two cars lemons sold.

VALENCIAS—	Avge.
Searchlight, SS Ex, Orange	$3.85
LEMONS—	**Avge.**
Justrite, QC Ex, Corona	$4.70
Minerva, QC Ex, Corona	4.05

PHILADELPHIA, Monday, Sept. 26.—One car Valencias sold.

VALENCIAS—	Avge.
Searchlight, SS Ex, Orange	$3.55
SS, SS Ex, Orange	2.90

PITTSBURG, Monday, Sept. 26.—Three cars sold. Market firm on oranges and lemons. Cool.

VALENCIAS—	Avge.
Jasmine, DM Ex, Duarte	$3.20
Stock Label, DM Ex, Duarte	1.85
LEMONS—	**Avge.**
Coyote, OK Ex	$4.25
Blue Jay, OK Ex	2.80

CLEVELAND, Monday, Sept. 26.—One car Valencias sold. Market active. Cool.

VALENCIAS—	Avge.
Glendora Heights, ACG Ex	$4.35
Hunter, ACG Ex, Glendora	2.70

CINCINNATI, Monday, Sept. 26.—Cool. Market steady. One car lemons sold.

LEMONS—Economy, Sd, Randolph Fruit Co., $4.45.

NEW YORK, Tuesday, Sept. 27.—Four cars oranges sold. Market steady on good fruit. Clear and fair.

VALENCIAS—	Avge.
Golden Pheasant, Xc Ind. F. Co.	$2.20
Freedom, Ec, Ind. F. Co	1.85
Pointer, A. C. G. Ex.	3.85
Squirrel, A. H. Ex.	2.00
Prairie Chicken	1.40

GRAPEFRUIT—

Stag, halves, $1.40; boxes, $2.80.

NEW YORK, Monday, Sept. 26.—Ten cars oranges and one car lemons sold. Market unchanged on boh oranges and lemons. Cloudy, warm.

VALENCIAS—	Avge.
Old Mission, fy., Chapman	$7.15
Old Mission, ch., Chapman	6.50
Golden Eagle, sd., Chapman	4.85
Lady Rowena	3.45
Aurora, fy., Or. E. Peycke Co.	4.35
Golden Sceptre, Or., Rialo O. Co.	2.40
Golden Pheasant, Xc., Ind. F. Co.	2.25
Carmencita S. Ex.	4.70
Butterfly	2.75
Teal, Covina Ex.	2.30
Sunflower, Xf., C. C. U.	2.40
Our Monogram, C. C. U.	2.05

LEMONS—Selected, $6.10.

BOSTON, Tuesday, Sept. 27.—Two cars sold. Firm. Market easier.

VALENCIAS—	Avge.
Athlete, S. A. Ex.	$3.15
Robusta No. 1	4.10
Robusta, A. H. Pachappa	4.10
Hobo, A. H. Pachappa	2.70

CHICAGO, Tuesday, Sept. 27.—Lemons rule steady and are not plentiful, with sales about as good as is to be expected at this time. Boxes, California, choice, $4.75@5.00; extra choice, $5.25@5.50; common, $4.00.

Oranges are steady and moderate sales. Grapefruit from Florida is selling fairly well. Boxes, late Valencia, extra choice, $4.25@4.50; choice, $3.75@4.00; grapefruit, Florida, moderate, $4.00@ 5.00.

POULTRY SHOW DATES.

Stockton, Cal., Nov. 8-12, 1910. First Annual Exhibition of the San Joaquin County Poultry Association. Eugene P. Sabin, Secretary, Stockton.

Oakland, California, Nov. 22-27, 1910. Annual Exhibition of the Alameda County Poultry Association. E. K. Healey, Secretary, Alameda, Cal.

Seattle, Wash., Dec. 5-10, 1910. F. E. Barth, Secretary.

Portland, Oregon, Dec. 5-10, 1910. J. C. Murray, Secretary; M. W. Coates and Harry H. Collier, Judges.

Petaluma, Cal., Dec. 8-11, 1910. Fourth Annual Poultry Show of the Petaluma Poultry Association. H. R. Campbell, Secretary, Petaluma.

Santa Barbara, Cal., Dec. 18-19, 1910. The annual show of the Santa Barbara Poultry and Pet Stock Association. W. E. Lingard, Secretary, R. F. D. No. 2, Santa Barbara, Cal.

Ashcroft, B. C., Dec. 23-31, 1910. W. Maxwell, Secretary; H. H. Collier, Judge.

Tacoma, Wash, January 3-11, 1911. Frank L. White, Secretary, South Tacoma; Miller Purvis, Judge.

San Diego, Jan. 4-5-6-7, 1911. San Diego Pigeon and Pet Stock Club. A P. A. rules. W. C. McDougal, Secre-

Los Angeles, Cal., Jan. 5-11, 1911. Annual of The Poultry Breeders Association of Southern California at Chutes Park. A. H. Memler, Secretary, San Gabriel.

Colfax, Wash., Jan. 10-14, 1911. H. Rosenkránz, Secretary. H. H. Collier, Judge.

Walla Walla, Wash., Jan. 17-21, 1911 H. Dickinson, Secretary; H. H. Collier, Judge.

Jerome, Idaho, January 24-28, 1911. Wm. N. Hardwick, Secretary.

GET READY FOR THE BULBS.

Continued from page 298.

the bulb is three inches below the surface. A rich but light soil is best; water copiously during the growing season, especially if the weather turns warm.

Hyacinths should be planted in open ground, in good rich soil, from November to January, covering to the depth of from 3 to 4 inches. For pot culture plant in 5-inch pots, leaving one-third of the bulb exposed. Keep in a cool dark place 5 or 6 weeks till the roots are fully developed, then gradually inure to the light.

Plant narcissus in light, rich soil, about three inches deep. Often planted in clumps when they are particularly effective; for this purpose set the bulbs about 3 inches apart each way; every three or four years they should be dug up and reset.

Amaryllis may be grown in the open border or in pots. Plant in spring, covering the bulb so that the neck will be even with the surface of the soil.

Lily culture for open ground: dig well, add some sand and well rotted manure (except for Auratum, which will not bear manure) and plant about 5 inhces deep. For pots: give thorough drainage, then fill up with compost, consisting of good, rich soil, peat and river sand; place the bulb firmly on this and cover them about one inch below the surface; give no water until plants appear above ground, then water freely.

Rannuculus should be planted in rich, well drained sandy soil. If the soil is heavy, prepare it by mixing in plenty of sand and well rotted manure to the depth of 6 or 7 inches, or by making a small trench 4 or 5 inches deep, filling this up with sand in which plant the bulbs about 3 inches deep, being careful to press the sand firm around them.

These general directions apply in the main to all cultivated bulbous plants, modified only in minor details according to the special requirements and characteristics of the different varieties. All flower lovers appreciate this division of flowering plants, and it is none too soon to put in a supply of bulbs and get the garden ready for their planting.

SHORT RAISIN CROP.

Continued from page 291.

Summary Showing Imports and Exports.

In the first column of the following figures are given the pounds of foreign raisins and Sultanas imported; the second column gives the exports in pounds of California raisins:

Year.	Pounds.	Pounds.
1900	10,309,489	2,415,456
1901	3,860,836	3,512,164
1902	6,683,545	2,323,276
1903	6,716,675	4,280,028
1904	6,687,617	4,020,418
1905	4,041,689	7,054,824
1906	12,414,855	4,528,502
1907	3,967,151	9,128,827
1908	9,132,353	5,684,541
1909	5,794,320	7,880,161
1910	5,042,683	8,526,114

The quantity of Sultanas imported into this country is not so great as is generally supposed, and the imports of currants have remained remarkably steady for upwards of fifteen years.

As a matter of fact, currants stand in a class by themselves, and only compete with raisins in about the same proportion as apples do with pears.

Year.	Sultanas Imported. Pounds.	Currants Imported. Pounds.
1902	2,030,374	36,238,976
1903	3,055,398	33,878,209
1904	3,850,444	38,347,649
1905	1,685,275	31,742,919
1906	7,372,568	37,078,311
1907	1,052,519	38,392,779
1908	1,638,028	38,652,656
1909	2,760,386	32,842,111
1910	Figures not issued.	33,326,030

There has been a great falling off in the imports of foreign raisins within the last twenty-five years. In 1884 the quantity imported amounted to 56,676,658 pounds, ten years later it had fallen to 27,543,563 pounds, and the last two years has amounted to only 5,000,000 pounds.

On the other hand the export of California raisins has increased in the last ten years from 2,000,000 pounds to 8,000,000 pounds.

The consumption of raisins in the United Kingdom amounts to five pounds per capita; in the United States it is less than 1½ pounds, so that a crop of double the present size should be easily consumed in this country.

A NOVEL CALENDAR.

If the Leonard Coates Nursery Co., of Morganhill, growers of all kinds of nursery stock, can deliver the varied assortment shown on the background of the 1911 calendar just issued, it will surely be in line for a big business. The calendar pad proper has a fund of information as to the planting and orchard operations for each month of the year. All that is very sober, staid and practical. But the background is covered with drawings or various plants which must have grown in the brain of some one connected with the company. There is the Tickia orlogia, the Arthbroomia rigida, the Piggwigia pyramidalis and many other "novelties." The Piggwigia has the pigs growing in a pyramid all right.

COMMON SENSE IN CANNING.

It has been practically impossible for the small canner to obtain accurate and up-to-date information on how to secure best results from canning fruits. To meet this demand the Canners' Supply Company, of 120 North Main St., Los Angeles, has just issued a book on canning which contains most valuable and complete information for the small canner and housewife. Without making use of technical phrases, this book tells how to "put up' every kind of fruit and vegetable, how to bottle fruit juices, can oranges, etc. It gives percentage of sugar in dieffrent fruits, exact temperatures to be maintained, and how to prevent working and spoiling of fruits after preserving. It also contains hundreds of practical and easily followed formulas, and a special treatise on canning for market, describing equipment and calling attention to increased protfis secured from presenting to the trade attractive specialties and oddities. This book costs one dollar, post paid, to any address and may be obtained of the Canners' Supply Company, at the address given above.

HIGH PRICES FOR STRAWBERRIES.

Present conditions indicate fabulously high prices for strawberries next season. Growers all over the country report the shortest plant crop ever known this year.

Now is the time to set out new plants and all those who intend doing so should place their orders for plants early.

W. W. Thomas, the Strawberry Plant Man, Anna, Ill., has a fine supply of hardy, full-rooted, Northern grown plants for sale.

The climate at Anna, Ill., with its dormant season, is the finest in the world for producing highest grade strawberry plants. Plants grown there have proved particularly profitable throughout the South and in California. Mr. Thomas has received hundreds of letters from the largest Southern and California planters to this effect during the 20 years he has been in the strawberry plant business. He probably ships more strawberry plants to the South and Southwest than any two other planters in this country.

His plants are guaranteed pure and true to name and the vitality, energy and fruit producing qualities are unequaled.

For special sale prices and free catalogue, postage prepaid to you, address W. W. Thomas, The Strawberry Plant Man, Anna, Ill.

THE SOIL AS A BATTLE-GROUND

The latest discoveries and theories in regard to the fertility of soil and its regeneration are interestingly set forth in the October Harper's by A. D. Hall, F. R. S., Director of the Rothamsted Experimental Station, England. The author shows how all vegetable life is aided by attendant bacteria in extracting nitrogen from the soil, and how another microscopic animal form has been discovered which preys on the plants' bacteria and is thus the chief enemy to be fought against in improving the growth of the crops and their yield.

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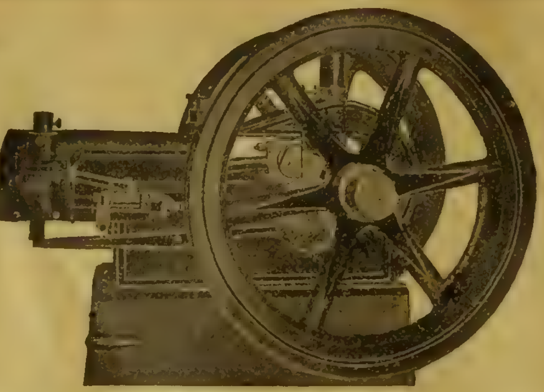

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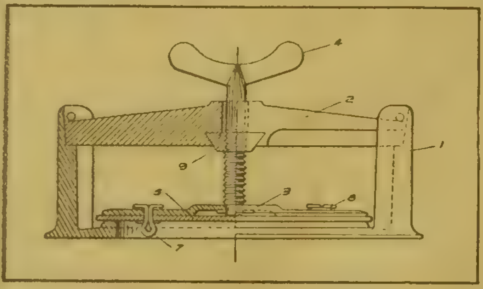

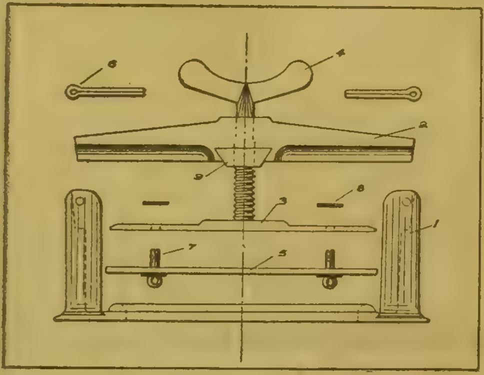

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3 Top or Lid	7 Cotter Pin
4 Brass Thumb Screw	8 Cotter Pin Washer
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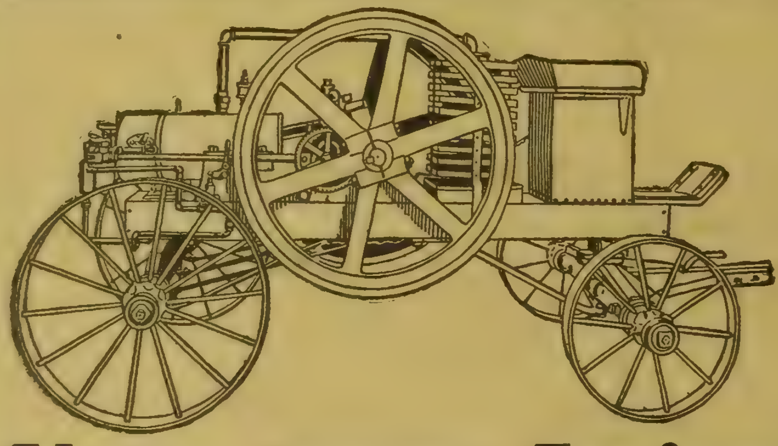

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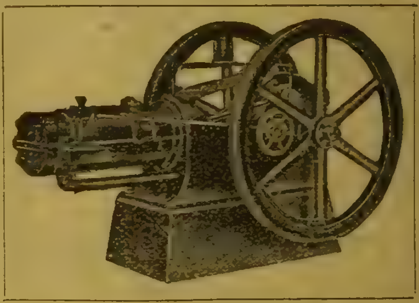

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Los Angeles October 6, 1910 San Francisco

THE CORK OAK OF COMMERCE.

A TREE OF BEAUTY AND UTILITY.

The cork oak of commerce is no stranger to the California landscape, for isolated specimens are to be found both in the northern and southern counties, some grand trees flourishing in and about Niles, Alhambra, in Pomona Park, at Chico and other points. Commercially, there is now growing an experimental forest on the slopes of Mt. Hamilton, under the direction of the Experiment Station at Berkeley, which promises good results. Under a recent date Deputy State Forester A. H. Hadsaw advises the Cultivator that in his judgment cork culture will one day become commercially important among California's numerous industries.

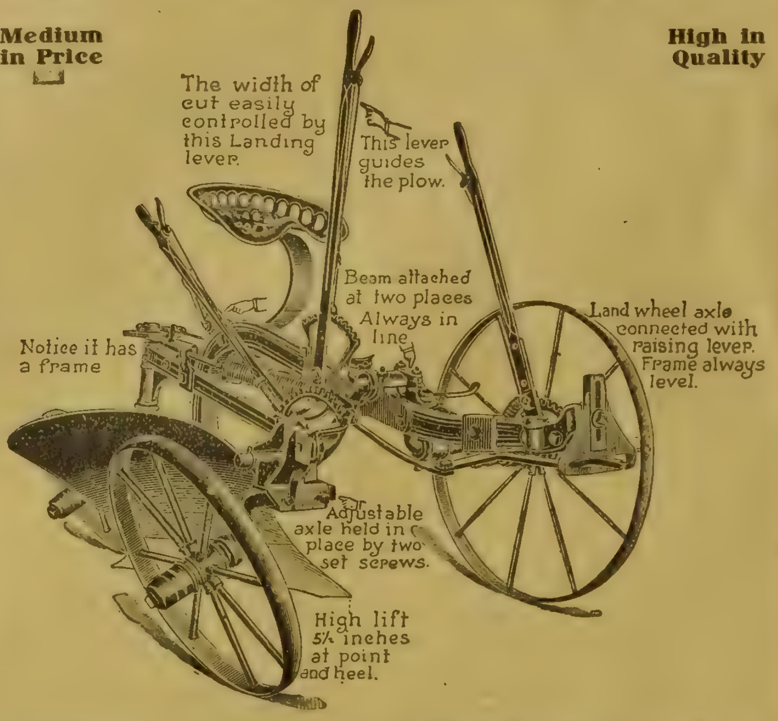
More than five acres of Spanish cork oak is under culture and all the trees are thriving. On the older trees there is a good growth of cork fully an inch thick. The trees are seven years old, from twenty-five to thirty feet in height and six inches in diameter.

This is the first time any attempt has been made to grow cork in this state. At the present time, the bulk of cork used in the United States is imported from Spain and Portugal.

Like our native oaks it is an evergreen, is of long life, and attains an average maximum height of about 40 feet; the acorns or seeds are of sweetish taste. But beyond its economic values for its bark, the tree possesses other attractions that render its planting desirable. As an object on the lawn, aligning the public highways, and grouped or planted singly in parks and public grounds, it has much to commend it from a view. point of beauty and comfort. Its umbrageous habit makes it especially desirable as a shade tree.

The Commodore
High Lift Sulky and Gang Plows

Medium in Price **High in Quality**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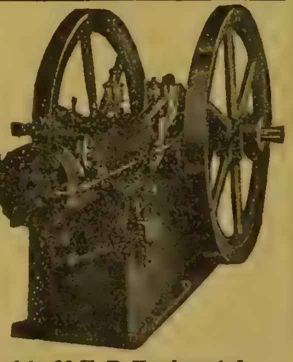

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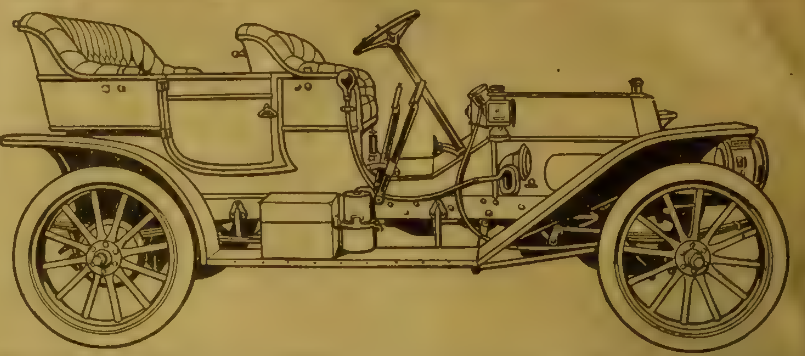

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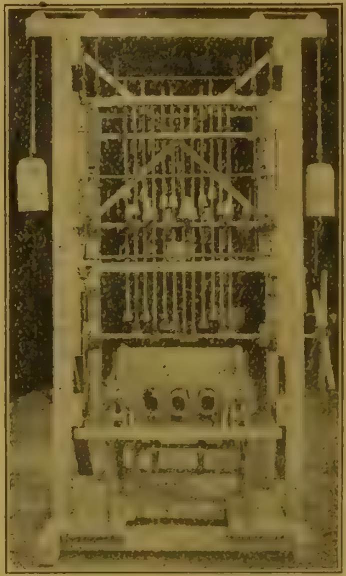

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California Cultivator

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Renovating the Orange Tree by Systematic Pruning

By C. R. Paine of Crafton

The observer of plant growth will note that, in the ordering of nature, leaves are so arranged as to give the greatest possible exposure to sunlight and air. A growing tree of any kind, in a state of vigor, has the most active growth in the terminals of its branches, the top branches increasing faster, until the tree attains its normal height, while the lower branches, especially when trees are crowded, gradually weaken and die. This is particularly noticeable in forest growth, where the fir tree bears its cones only on the topmost branches, and in pines, where the branches higher up produce their cones (at the ends). Among the multitudinous blossoms of the orange tree, on the new spring growth, it can be fairly well predicted which particular blossoms will mature to fruit, for it is at the very ends where most plant food is being made.

The law, that favoring conditions of growth are found in exposure, universally applies.

In cultural conditions, where the orchardist is in control, it is policy, therefore, to secure the largest possible number of such points of life activity in obedience to such law.

A young orange tree and one approaching the maturing stage can do fairly well without assistance in modifying its form, but in the latter, the maturing stage, it is time to interfere to secure the ultimate health of the tree and future profit.

In the orange tree, the vigor of its growth under usual stimulating conditions, a heavy foliage and fruitage is produced, with the result that branches above, smother those below, shutting out from them the normal supply of air and light, without which they suffer and ultimately perish. While the tree is young, and not of large circumference, these influences are so near to the poorly situated leaves, that their suffering is less and little noticeable, but, when the tree becomes of larger proportions, it is inevitable, that, when untended, the smothered branches become of little value and finally die, in which process of gradual decadence they are rarely of use themselves and become hindrances to the more profitable parts of the tree.

The plain inference from these conditions, if the grower desires to profit by obedience to natural law, (though he may have no special knowledge of plant physiology as a science) is to cut out such failing branches. The sap flow to them is lessening daily; the bark color is darkening; the master branch becomes bright and vigorous and the flow of the life fluid makes active growth but an inch or so along the old channels.

This should be done as soon as the weakened state appears, for, when they are dead and dry they have little or no effect in shading, or hindering air circulation, but offer mechanical obstruction only. If the work of removal is done while such branches are still green, the beneficial effect is apparent to the good branches remaining, which get the needed exposure. The good branches, thus relieved are, however, subject to the incubus of one or more lively shoots growing upon them, which must be taken off before they do mischief to their mother branch, for their upright growth gives them advantage of position and they would dominate the branch that is best for fruiting. If, however, they are not aspiring, but modest fruiting growth, they may be considered as part of the principal branch.

Not so, however, those strong, rank-growing suckers that issue from the trunk, or on main limbs near their junction with the trunk and shoot upward with an intensity of energy as if to become the whole tree. They would, indeed, if unmolested, change the character of the tree in its regular habits of moderate growth, accompanied by the production of the finest quality of fruit, which should be the result of cultural conditions. These exuberant parts are not needed for tree renewal, unless one is willing to give up direction of growth and submit to the wild ways of nature. Cut off, then, these intruders, before they suppress the activities of the parts they grow upon, which bear the better fruit, and which, in time they would supplant.

When a large orange tree is made clean on the inside, that is, hollowed out by the process of breaking and cutting out the dead twigs and branches, it is obvious that little or no good is done, so far as providing for access of light and air; neither does good, but rather harm ensues from the practice of clipping the outer surface of the tree unless a more shapely appearance is considered the object, for the head of the tree is closed by the succeeding growth to important natural influences.

Of course, there can be no objection to cutting off large protruding parts, or dangling limbs.

Each limb, so treated, completes the pruning of the tree at this stage of its life, provided suckers have been kept out, and cross limbs eliminated from the beginning.

The work thus far described, keeps the tree of middle age in good condition, in constant thriftiness, because neither the younger parts nor the used up older have been permitted to interfere with the best parts.

Then there comes a time when the tree has the appearance of age, the signs of which are enfeebled growth of the ends of the limbs, especially of those directed upward. This is shown both in the yellow and smaller foliage and in the inferior quality of the fruit. The leaves, when not wholly yellow, are green only in the veins or for a little distance on either side. Life forces persist longer in the veins because they have a fibrous, more woody structure than other parts of the leaf blade. This small proportion of the whole leaf surface having green parts, (chloroplasts) which alone have the power, under the influence of sunlight, of food manufacture, contributes very materially to starvation of the tree. This may go on so far that, in the natural course of things, the whole exterior of the tree is surprisingly thinned by lack of good growth. It is surely an alarming state of decadence.

Among the causes of the failing condition of the outer parts of the limbs are soil washing by concentrated rainfall or careless irrigation, or lack of sufficient humus material. These causes we may know. Others exist, like unsuitable proportions and quantities of fertilizing material, which have to be guessed at. So, of soil tending, which may have been too deep and too frequent in light soils, resulting in burning out of the humus and too shallow or too infrequent or untimely cultivation in heavy soils. Whatever the cause, which our scientists and practical orchardists must unitedly study and work out, a remedy, for a time at least, is naturally found in resorting to a more robust location of growing and fruiting points upon the still vigorous larger parts within the head of the tree. The tree has the opportunity for revival by the openness brought about by the exhausted and feeble growth of the outer parts. Upon these larger parts of the limbs, and from the trunk appear, under what must be favoring conditions, new shoots with large leaves issuing from newly-formed fruiting-wood. The tree is then made up of two quite opposite features, a healthy, vigorous interior, productive of merchantable fruit, the outside portions of the same limbs, bearing some fruit of inferior grade; and other parts of the same being useless brush of which the neglected tree cannot rid itself.

The work described, as belonging to the first stage of pruning, postpones the deterioration of the branches, if it has been begun in sason, and been periodically performed by intelligent labor. But when this serious alteration in the condition of the tree, now so prevalent, is coming on, or has been reached, a new practice becomes necessary, which is based on the same elementary principle as the first; namely, free access of atmospheric influenecs.

It may be said, by the way, that basic principles are the only reasons entitled to respect as foundations for methods of work.

The failing top branches afford a vantage ground, incomparably superior to the side branches, where the first work is done, for the admission of air-contained food—carbon dioxide —and light unhindered, direct from the sky above, which is the agent for its utilization to provide the carbohydrates, sugar and starch.

Limbs, though large, that constitute the upright part of the tree, and branches that have formed an angle with them, may be freely removed, even though somewhat fruitful. The open space resulting from this seemingly severe pruning, though an irregular space, may be likened to an inverted cone.

When the cuts are made and the old limbs tossed out, the barren space that meets the eye seems like a waste, but it is, in reality, the battle-ground whereon the tree will regain new life. The proof that such is the case begins to come at once for it is in the spring, when the crop is off, that the opening is made. Within the tree, what seems almost a miracle of change, takes place; along the side limbs from junctions to terminals, cohorts of vigorous branchlets arise, their new leaves, broad and green, at work in food-supplying, as if the tree were again a sapling. Such new leaves are rarely marked with streaks of yellow, the indication of lack of ability to manufacture plant food.

The large parts of limbs, bare before exposure, become regions of lively growth by the formation of adventitious buds. Here is elaborated sap in abundant supply in the past, lying between the bark and wood, which is the pathway of distribution of nutritive material or manufactured food-stuff. Not only is food here in circulation, that may be made into plant form by growth, but there is always an accumulation of stored food in healthy trunks and limbs and medullary rays, and the utilization, for growth that is beginning here for the first time, is the attractive force that draws it to the point of need. This accounts for the new development which receives the reserve until the new leaves can manufacture for themselves.

Intermingled with the short-stemmed, broad-leafed fruit growth, are a few new sucker-like shoots, especially where the cuts were made; these do not grow lank and long as do suckers in an unpruned tree, where the open spot of light they aim to pierce is small. These and such of the newly-formed fruit branches as would be in excess, especially those higher up, should be taken away, and the open space, once secured, should be maintained as the most important region wherein increased vitality can be gained.

Within the first season, and increasingly so in successive seasons, the new foliage throughout the interior as well as in the center becomes fruitful. The side limbs have impelling influences to growth, not alone at or near their extremities as, at first, but all around them, and dead wood, once removed, can never form again.

When these excellent results are gained and the grower reviews the processes by which they were secured, he no longer laments what seemed destructive work in cutting out decadent limbs at the side and the top, and is ready to subscribe to the policy of avoiding, in his business as a fruit grower, the distribution of nutrition to regions unproductive of good fruiting branches or fruit. He may, too, doubt the advisability of the plant to permit tree renewal by natural sucker growth, which also has its origin in regions of active sap flow and storage, to the detriment of regular branches.

It may be thought to be well enough to depend on the weight of foliage and fruit of aging trees to open the top enough to receive equal benefits with the artificial treatment described; but such benefits follow only in a minor degree, and are temporary, because new growth in the top may be thrifty enough to soon fill such an opening and shut out the reviving agencies. Such dependence is not wise, for the space must be large to bring about the desired renewal.

Growth has its limits and age will struggle for control, but there is still a third resort, by pruning, to rehabilitate a decadent orange tree and keep it well at work.

As has been said, the reservoir of vital force in that part of the tree above the ground is in the trunk and larger limbs; the weakness appears in their subdivisions, which have small and few, yellow or variegated leaves.

Since rejuvenation is from within, the poor old limbs may be cut back to points of vital force where new shoots have been made ready, by superior location, from the work previously done, to take the place of the old. The tree is then new without as well as within.

When a grower with his best judgment and in due season, in the late summer and again in the winter, has provided sufficient available plant food, has put his soil in mellow tilth after the season's rains or irrigations, and has avoided untimely applications of cold water at the critical period of the setting of the fruit, but has failed to provide in the tree itself, extra supplies of growing points in stable locations, in so far he has invited crop failure; for, when the chill nights of spring arrive, and the dreaded June drop period of hot days and drying winds comes on, it is only in the most vigorous regions that the young fruit will have staying qualities. Drifting to success in orchard methods is impossible.

The different processes, all performed in subservience to natural law, have kept alive and in constant use the vital energies, have provided new and better areas for fruit production with a scarcely appreciable elimination of such area, contrary to the plan of total decapitation at occasional intervals, and, if soil and cultural conditions have been favorable, have left the tree to a green old age.

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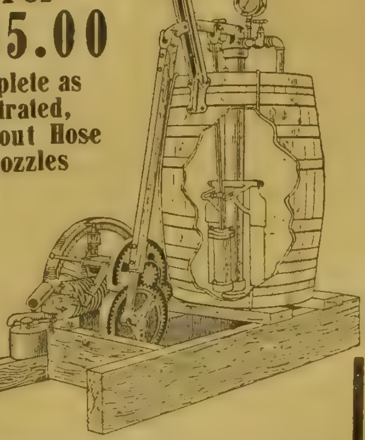

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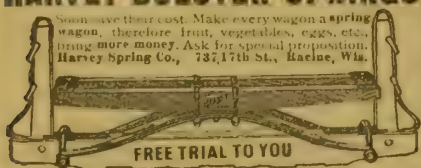

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Citrus and Tropical Fruits

THE WHITEFLY ENEMIES OF CITRUS.

By A. W. Morrill, Entomologist, Arizona Horticultural Commission.

THE whiteflies destructive to citrus, are more dreaded in sections where they do not exist than any and all other citrus pests, with the possible exception of the Morelos orange worm. This apprehension is well founded, since the difficulties met with in the successful control of whiteflies are much greater than in the case of the scale insects. Even the mealy bugs, which are so difficult to control by artificial means—spraying and fumigation—are not so much feared; since in their case, there is promise of successful control by means of natural enemies.

The Cuban whitefly, recently introduced, is not well enough known to estimate its importance. The spotted-wing fly is more destructive to grapefruit and, on the average, is less destructive to the orange than is the citrus whitefly. With its restricted distribution and reduced average damage, the spotted-wing fly is estimated to cause a total loss of between one hundred and one hundred and fifty thousand dollars per year in Florida; while the better known citrus white-fly is responsible for losses amounting to more than a million dollars annually. These losses will continue to be sustained until systematic control measures, such as advocated in forthcoming reports of investigations of the United States Department of Agriculture, are put into effect.

The spotted-wing fly, so far as known, has no other food plants than citrus. In its habits, life-history and seasonal history, it differs in certain details from the citrus whitefly, but in a general way, the two species are much alike. The latter species being the one of widest distribution as well as the most destructive, is hereinafter the subject of discussion.

The young stages of the whitefly are small and scale-like, attached closely to the leaves, usually to the lower surface, and never developing on stems or fruit. The citrus whitefly has a long list of food plants aside from citrus—china and umbrella trees, cape jessamine and privets being the most important. The adults are white, winged insects in both sexes. About two-thirds are females and each of these lays, on the average, about one hundred eggs.

While the sapping of the leaves in itself is sufficient to injure the trees to a slight extent, the most important injury is due to the resulting sooty mould fungus which develops on the honeydew excreted by the insects, as in the case of the mealy bug, black scale and other unarmored scales. The yield of fruit is greatly reduced, and the portion of the rind of the fruits which is covered by the sooty mould may fail to color up when the fruit ripens or may remain green indefinitely. The loss in the value of the crop alone is generally considered to amount to more than 50 per cent, while the deterioration in the value of infested groves is a considerable loss in itself.

The most economical control of the citrus whitefly is a matter based on a more thorough knowledge of the insect itself than is required in the case of any other citrus pest. Accordingly, the investigations of the insect and of the methods of controlling it have been extensive; more so than with all other citrus pests together. For direct remedies, spraying and fumigation are both adaptable, but the former method is the more expensive, and few can obtain satisfactory results with it. The second method is more thorough and profitable when conditions are such that it is practicable, or after conditions have been modified to make it practicable. The present lack of properly organized efforts is the greatest obstacle to successful whitefly control in Florida.

The citrus whitefly has no natural enemies in this country which are able to cope successfully with the pest. There are several fungous parasites which attack it, and while, periodically, these bring the insects under subjection, the average losses sustained are not reduced to a satisfactory extent. There are no ladybug or other predaceous enemies of importance in this country and true parasites are unknown.

The investigations of the citrus and spotted-wing fly have not supplied any evidence of value in estimating the effect of climatic conditions in arid regions. At one time it was thought that these insects could not thrive in California, yet their introduction there into the drier and hotter interior valleys has fully demonstrated their ability to thrive there as well as in the most humid regions in Florida. Whatever retarding effect the dry climate in California may have had on the multiplication of the insects was probably counterbalanced by the unfavorable effects on fungous and bacterial diseases, which themselves have a retarding effect in humid climates.

THE WHITE FLY INVASION.

Citrus growers of this state can certainly congratulate themselves that the Whitefly invasion of a couple of years ago was thoroughly stamped out,—thanks to a corps of efficient horticultural officers. What this relief really means to the welfare of orange and lemon trees is best told in the following quotation from the Tampa (Florida) Tribune:

The white fly, that dread insect pest which threatens the orange trees of this state, and whose rapid spread has caused dismay in the hearts of the growers, is the worst that has ever been known in this section, according to old residents. Growers declare that something must be done at once to stamp out the pest in order to protect the orange industry and it is hoped that the investigations and experiments now being made by the government will reveal some effective method of dealing with the matter.

For the past several days the flies have been so thick in the atmosphere during the late afternoon and early evening in some sections of the city that a person could hardly breathe. They get into the eyes and mouth while riding on cars or in automobiles. Many Tampans have not known what they were and have wondered what caused the thick cloud which covered them like light snow. There must be billions of the insects within the city.

It is agreed that the time has arrived for action and that something should be done without delay. The city affords a good breeding place for them on account of the different trees and different kinds of foliage which it affords. The insect has a fine ground on which to grow and develop. It is declared that China trees, frequent in Tampa, form fine breeding places for them, and orange growers advocate the cutting down of all China trees.

BEGINNING OF THE CALIFORNIA ORANGE INDUSTRY.

For nearly three-quarters of a century oranges had been produced in Southern California, but not for exportation. The first trees were grown at San Gabriel Mission about the beginning of the last century. A few had been planted at other Missions of the South and in the gardens of some of the wealthier families. The first trees grown within the limits of the Pueblo of Los Angeles were planted in 1815. William Wolfskill, in 1841, planted the first orange grove of any extent. It was on what are now the Southern Pacific depot grounds of Los Angeles. He added to his original orchard until it covered seventy acres. In the later '60s it was reported to be pay-

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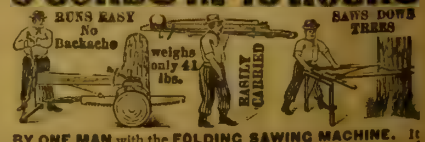

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ing at the rate of $1,000 per acre net. This yield was probably exaggerated but it was sufficient to induce the planting of orange groves wherever suitable land with irrigating facilities could be procured.

The extraordinary profits made from oranges by Wolfskill and a few others who had bearing orchards in the later '60s and early '70s started an epidemic of orange growing. Like the silkworm fad large profits were made from the sale of nursery stock. It was a very scrubby sort of tree that could be bought for a dollar, and a thrifty two-year-old commanded two to three dollars at the nursery.

As it took about seventy-five trees to plant an acre it required considerable ready money to embark in the business. Many prospective orange growers, too poor to buy stock, raised their own from the seed. It required two years longer to wait for returns but with them money was more valuable than time. If oranges were apples of gold the seeds in those days were golden nuggets. The visitor to a grove might be indulged in a luscious orange but at the same time he would be solicited "to save the seeds."—J. M. Quinn, in October Pacific Monthly.

HAWAIIAN PINEAPPLES.

George N. Moran, New York.

An excellent example of the possibilities of the new territorial possessions of the United States and an instance of what brains and business energy can help a young man accomplish, is furnished by the history of the pineapple industry in Hawaii.

Trade statistics show a truly wonderful commercial growth to the credit of Hawaii in the last twenty years. In 1890 her exports were $4,711,417 while last year they were $17,780,778. In 1890 her shipments to the United States were $12,313,908 while last year they were $40,432,312. Sugar leads in the products of Hawaii with fruits and nuts second on the list but while the output of sugar has not materially increased in the last few years the tonnage of fruits from Hawaii has shown a remarkable growth during that same time. Virtually all of the land adaptable to pineapple cultivation has already been planted, and that industry now is one of the most important on the Hawaiian list.

The man said by governmental and lay students of the Hawaiian situation to be most largely responsible for the development of the pineapple industry in Hawaii is not yet thirty-three years old. He is James D. Dole, Harvard graduate, son of the Rev. Charles F. Dole of Jamaica Plains near Boston, and a cousin of former Governor Dole of Hawaii. Mr. Dole picked out Hawaii, before its annexation to the United States, as a place where a young man with a little money and plenty of energy might find better openings than in the crowded offices of a big city. He introduced new ideas, some learned theoretically in college and some scientifically adapted from the methods then in vogue. He found that there was only one cannery with a total yearly output of only 1,000 cases and that there was no well developed market for the pineapples. He built a model pineapple cannery in 1903 that showed an output of 1,800 cases the first year of its operation. Today the Hawaiian output is more than 200,000 cases annually and the market for the product has been wonderfully enlarged. In 1901 there were forty acres under pineapple cultivation while today there are more than 5,000 acres planted in pineapples and the United States is now at or near the head of the list of pineapple producing countries.

The annual meeting of the stockholders of the San Dimas Orange Growers' Association was held Sept. 19, D. C. Teague presiding. The report of the management showed that 620 cars of oranges have been shipped from there during the past season, while nearly $500,000 was distributed among the growers, this being $1.51 per packed box.

LEMONS CURE MALARIA.

The following, taken from the New York Sun, states that many have been cured of malaria by the use of lemons:

"Some twenty years ago I was a victim of the disease, and, of course, took the quinine treatment, till my head began to grow big and roar internally and infernally. A change of climate was recommended, and I went to Saratoga, but my head continued to require more space and the roaring became louder, till I thought I would go mad.

"One day my husband chanced to see an article written by a physician on the Pacific coast, in which he said he had for 15 years been trying to find a remedy for malaria which would not have the injurious effect of quinine. He was successful, and in many places where public works had been abandoned because of malaria among the men they were resumed. His cure was very simple and within the reach of all. Take one lemon, wash thoroughly with a brush and hot water till all germs are gone, cut in very small pieces, using skin, seeds and all; cook in three glasses of water till reduced to one, and take this while fasting. I took it before breakfast, and in less than a week I was myself again. Since then I've had no use for doctors. If I feel a little 'off' I resort to the lemon cure and all is well."

EXTERMINATING THRIPS.

Citrus growers at Globe, Arizona, are carrying along a series of experiments which they think have led to some discoveries with reference to control of the thrips. We note in an exchange:

Working independent of the government entomologist, the Globe orange growers believe they have found the most feasible method of keeping down the thrips, the results of the past season seeming to bear out the contention of the growers of that section that their plan is the most satisfactory one.

It is the theory that sprays are but partially effective, as the thrips is a migratory insect. They have devoted their attention to an attempt to control the pest through proper cultural methods. Cover crops are discouraged, fertilization being done carefully after soil analysis shows the ingredients which the soil lacks.

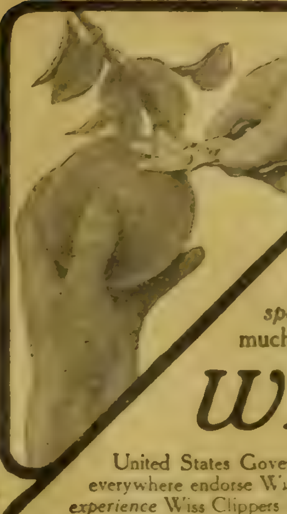
Every vestige of vegetation is kept from the rows between and under the trees and liberal and even profuse cultivation of the ground is encouraged. This year those orchards in which this method has been followed show practically no effects from the thrips, not more than six to ten per cent of the fruit being scarred from the insects, and most of that in such small degree as not to seriously affect the grade.

THE NAVEL IN HISTORY.

Go away from home to learn about your own affairs. Coleman's Rural World of St. Louis is responsible for the following history, bearing on our popular orange:

The first we knew of the Navel orange, which is very valuable not only on account of its fine quality and taste, but also because of its being seedless, is of a single tree that was found growing on the northern shore of the Mediterranean sea. This was about the year 1565, or nearly 350 years ago. A monk in a monastery in that far away country painted a picture of the fruit and wrote a description of it, both of which may be seen in the library of the Roman Catholic University at Washington, D. C. Grafts of this tree were taken to Spain by the Moors several hundred years ago and from Spain the trees were carried to South America by the Spaniards.

As intimated in the Calexico Chronicle sometime ago the Inter-California Land Company, which is the Holt syndicate engaged in developing the 32,000 acre colony at Cocopah, 16 miles from Calexico on the Inter-California railroad, has sold out complete to the Cudahy Packing Company. The price is said to be a million and a quarter.



Stop *Bruising* Fruit and *Losing* Money.

Every time your clippers pierce an orange's skin you open the way to decay. Usually the cut is too small to *notice*—and the bruised one is crated with the good. *You* know that *one decaying orange may spoil an entire crate*—you lose just that much money. You *won't* bruise fruit if you use

WISS ORANGE CLIPPERS

United States Government Experts and leading citrus growers everywhere endorse Wiss Orange Clippers because they *know by experience* Wiss Clippers *last longest, do best work* and *save money* by *minimizing* the liability of bruising the fruit.

The blades are specially curved and ground—the points and outer edges are smoothened and rounded to avoid bruising. Handles are shaped to prevent tiring of the hand. Wiss Orange Clippers will give years of service — and are unrestrictedly guaranteed to give satisfaction. *For sale by all dealers.*

Wiss Solid Steel *Pruning Shears* will snip a broom handle and cut the most delicate tendrils. All parts are interchangeable and any broken parts can be readily replaced. 9-inch size, $2.25.

J. WISS & SONS CO., 15-33 Littleton Avenue, Newark, N. J.

Hulled

Melilotus Clover

Produces 15 to 20 tons green manure to acre. Has heavier root system than Burr Clover or Vetch. At the prices we quote it is the cheapest of all. Write for prices and pamphlet entitled,

"Melilotus Clover, the Great Cover Crop."

We are headquarters for Vetch, Field Peas and all other cover crop seeds. Write for prices.

Germain Seed and Plant Co.

326-330 S. Main St. Los Angeles, Cal.

Harrow With a Kramer While You Plow

With five years of experimental work behind us, with the kindly help and assistance of thousands of farmers, State and United States Departments of Agriculture—we are in a position to offer to progressive farmers

The Only Successful Rotary Harrow

for plow attachment. Our 1910 Swastika and Hercules Models constitute the most thoroughly reliable and practical line of Plow Harrows on the market, and at prices within the easy reach of every farmer using riding or wheel walking plows. 7 models to select from.

Our proposition has appealed to over [illegible] farmers, and will appeal to you. Write today for our illustrated catalog, free. It brings full particulars. Five 2c stamps brings our beautiful watch fob. Send now for catalog.

THE KRAMER COMPANY, PAXTON, ILLINOIS

Orange and Lemon Trees

Smith & Clark Company

Nurseries: Villa Park

Orange, Cal.

R. D. 1
Phone 377

Special Offer--Orange Seed Bed Stock For Fall Planting

200,000 plants. Sweet or Sour. Eighteen months old, extra large size, grown in the sun and well hardened, especially adapted for fall or early spring planting. Have never been dug over. Come in and see.

Chas. S. McMillan, Citrus Nurseryman

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232 So. Marengo Ave,
Alhambra, Cal.

Sour Orange Seed Bed Stock For Fall Planting

Also Sweet Stock. This is heavy stock eighteen months from seed and can be successfully planted in nursery now, making large trees for budding next fall. Plant Now.

3,000 1½-year old Valencias, extra fine. A few Eureka Lemons left.

F. H. Disbrow, Prop.
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Southland Nurseries, Pasadena, Cal.
R. F. D. Route 1

Seed Bed Stock For Sale

Why not buy the best? I have about 15,000 one year sour stock, also a large amount of two year stock, both sweet and sour.

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Black 17

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STAR PORTABLE DRILLING MACHINES

More Profitable Wells

Can be drilled with the right machine. In buying a Drilling Machine, the first vital point is to be sure it will yield you the greatest possible service —and hence the greatest possible profits. You *must* know.

Star Portable Drilling Machines

have stood the test for years in comparisou with all makes, and the very fact that fully 95% of all Portable Machines now at work in the Oil Fields are Star Machines is all the proof necessary as to their superiority for all kinds of Well Drilling.

Any Depth—Any Size Hole—Anywhere

Drilling Machines, Engines, Cordage, Etc.

Edward R. Bacon
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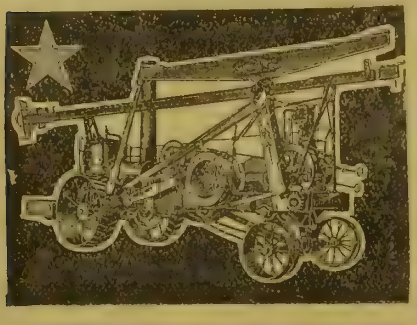

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RAIN
Don't Wait For It

Plant now:

- Vetch
- Alfalfa
- Clovers
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Valley Seed Co.
313 J St., Sacramento, Cal.
Catalogue and prices on request

VENADERA HERD
Registered A. J. C. C. Jerseys
St. Lambert and Flying Fox Blood. Margery Golden's Fox heads the Herd. Young stock for sale. GUY H. MILLER, Prop., R. 3, Modesto, Cal.

Thoroughbred Poland China Swine
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High Grade Stock of Best Strains.
Young Stock For Sale
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Tree and Shrub Fruits

RESPONSIBILITY OF NURSERYMEN.

THE nursery business of the Pacific Coast is on a materially different basis than in the East, there the "tree agent" is the principal agency of tree distribution, and the success of the nursery depends upon the glibness of this agent. Californians wish to come in contact with the man at the head of the nursery work and the "agent" would starve here. Besides the orchardist knows his own mind and is not "talked" into buying what the agent wishes to sell, as is indicated in the following clipping from American Fruits:—

"Orchard planting is somewhat like life insurance in more ways than one. It is an investment that brings a great deal of satisfaction, and it usually pays its annual dividends, but the most decided similarity is the fact that a great deal of talking must be done by some one on the subject before the policy is ever written, or the orchard planted. In the case of the orchard this talking usually falls to the nurseryman or the salesman. There is scarcely a home that is provided with fine fruits through the season, but its owner was talked into it by a tree man. Go further and you will find that a large percentage of the commercial fruit growers was also originally argued into the business by energetic tree men. Study the history of the prominent fruit sections where peaches are shipped by the hundred carloads, and if you will trace the business back to its infancy you will find almost invariably that it was started through the work of some tree salesman. The credit for production of the finest peaches in the world, therefore, may well be divided between the nurseryman and the orchardist. This is a big responsibility which the nurseryman carries, and therefore he should exercise care that he grow only the best varieties of fruit and see to it that all orders are filled with good stock. The nurseryman should be an intelligent guide to the fruit grower. The average planter looks to him to be well posted as to what, when and how to plant, and the nurseryman should aim high in his business and try to post himself so thoroughly that he may not have to turn any customer or seeker for information away unsatisfied. The position of nurseryman is one of great importance to the country. It is a calling that one cannot just drop into and succeed at. He must go into it with earnestness and enthusiasm and make it a life study as well as a life business in order to be of any value to the country, or make anything out of it for himself. The nurseryman only serves his part properly in the business by making it his permanent occupation, and he cannot give his customers satisfaction unless he is competent to advise a tree planter as to the proper trees for planting under any conditions."

TILLAGE OF SMALL FRUITS.

The purpose of maintaining tillage is for perpetuation or maintenance of desirable soil conditions, secured through preparative tillage.

The one should follow the other closely, else much of the good result secured through the first will be lost.

The object is to preserve that ideal, moist and mellow condition characteristic of the ideal plant and seedbed.

How to maintain a maximum supply of soil moisture is the greatest of the problems to be solved by the fruitgrowers.

However, it is only through the fruiting season that the moisture problem assumes a serious aspect.

We have proven to our satisfaction that in so far as the growth and development of fruit plants are concerned, tillage can be made to conserve moisture sufficient to promote a satisfactory growth.

Time and again we have secured ideal growth in cane and plant, notwithstanding severe, protracted droughts, just by exercising watchfulness and persistency in maintaining the earth mulch.

There is a continuous upward movement of soil moisture. It is caused by the laws of equalization.

If the supply of soil water among soil grains is greater at one point, water from these congested points flows toward those points where there are less amounts, until there is uniformity in the supply.

The manner in which water is evaporated from all surfaces exposed to the sun and air currents is well known, and it is through the working of these two principles that soil moisture is so quickly depleted where no measures are taken to prevent the loss.

To prevent this depletion of soil moisture through surface evaporations the surface of the ground must be protected from the sun and air, or the upward flow of soil moisture intercepted ere the surface is reached.

The former is accomplished by covering the surface with straw or other material, the latter by stirring the surface soil grains, which break up the interstices aforementioned, checking the upward flow at the point where the undisturbed and loose soil grains meet.

So long as capillary movement of soil moisture is held in check by this layer of loose soil there can be but little surface evaporation.

To preserve an ideal earth mulch, however, requires frequent stirrings, depending upon the character of the soil.

As a rule the surface soil should be stirred once in seven days and particular care must be taken to cultivate freely.

The conservation of soil moisture is but one of the results secured through efficient tillage, for all weed-growth is held in check and ideal soil conditions maintained favorable to soil activity and development of the root-system of plants.

How deeply shall we cultivate? The strawberry is a pronounced surface-feeder so to speak, hence, cultivation should not exceed two inches in depth for the plant must fill the soil full of its roots and rootlets if it is to make good at fruiting time.

The roots of bush-fruits reach deep into the soil, hence in their culture it is advisable to cultivate more deeply than with the strawberry—say four inches.

In the growing of bush-fruits, the grower may maintain the dust mulch through the entire season, and by this measure good crops are secured, though a drought may be prevailing through the fruiting season.

Some growers advocate the suspension of tillage operations during the blooming time, which in our opinion is a mistake.

The theory is that dust particles thus set in motion come in contact with the pistils of the blossoms, interfering with complete pollenization.

We have noticed no such ill results and we begin cultivation in the spring just as soon as soil conditions will permit, and never let up in our efforts until the harvest is over.

Of such importance do we believe the work to be that we would cultivate by moonlight rather than neglect the plantation during the blooming and fruiting season.

With strawberries, however, this is impracticable, as the strawberry blossoms and fruit are very close to the ground, where they are subject to contact from dust and soil particles. —Farm World.

Two cars of honey, comprising 520 cases of 120 lbs. each, were shipped from Tulare, September 24. The market price is $7.20 a case. Two other cars went out a short time ago.

A watermelon, weighing fifty-four pounds, was grown by J. M. Waggoner of the Dakota colony, at Kerman. The melon was thirty inches in length and thirty-three and a half in diameter.

TREES

Deciduous, Citrus and Ornamental Trees

Every one true to name. Well developed, strong, healthy roots. Grown in the finest soil and under perfect conditions.

Our System of Growing

and caring for all our trees and the superiority of the stock from which we propagate our trees are points you should consider when buying.

We have the largest and best stock on the coast, and our trees are all properly packed for shipping, so they will reach their destination in perfect condition.

Never Buy Cheap Trees

for such purchases are usually a great loss rather than a saving.

Everything in Trees, Fruit and Ornamental

There is not a desirable sort that will not be found in our list.

Grape Vines

We are the largest growers of raisin, wine and table grapes on the Pacific coast. Our vines are carefully graded. It is worth your while to figure with us.

Calimyrna Figs

The best and most profitable fig for all commercial purposes. It is the genuine Smyrna fig of commerce. We were the first to produce the Smyrna fig in the United States and to demonstrate its great commercial value here.

Burbank's New Creations

We are sole propagators and disseminators.

Palms and Roses

No better stock in the state than our field grown roses.

California Horticulture: The Fruit Growers' Guide
By Geo. C. Roeding

120 pages, 7¾ by 10¾. Beautiful lithographed cover. Profusely illustrated with half-tone engravings and color plates. It not only lists but describes 2000 varieties of trees and plants. Contains valuable suggestions on soil, preparation, planting, cultivating, irrigating and pruning. Price mailed, 25 cents.

PAID-UP CAPITAL $ 200,000.00
FANCHER CREEK NURSERIES
INC.
Geo. C. Roeding Pres. & Mgr.
Box 12 Fresno, California, U.S.A.

VALENCIA RAISIN CROP SHORT.

Consul Robert Frazer, Jr., reports as follows in the Daily Consular and Trade Reports under date of September 7:

The reports of damaged and short crops of raisins and currants received from the whole of the Mediterranean zone producing these fruits seem well founded. Owing to an irregular and unfavorable spring, the increased ravages of the phylloxera, and a persistent summer drought, which has partly dried many of the sources of irrigation in this section of Spain, the yield of the present raisin crop will undoubtedly fall considerably below the average. The latest estimates make a total of only 20,000 tons, which would be 10,000 tons below the normal. Latest advices from Smyrna report a probable crop of Sultana raisins of only 25,000 tons, and Malaga estimates are 30 per cent below last year's total. Stocks of Valencia raisins are practically cleared both at Denia and in the important dried-fruit centers of London and Liverpool, where prices show a sharp advance of 2 shillings (48 2-3 cents) a hundredweight (112 pounds). With the exception of Sultana raisins, the stocks of which reached some 6,000 tons in London at the beginning of July, the new crops will appear on practically bare markets, and the outlook is regarded as exceptionally promising for Valencia growers possessing even reduced crops of good quality. The district of Jabea shows the greatest shortage this season, while a few favored sections of small area promise a fine abundant crop of large fruit.

SOIL CONVENTION.

A very great disappointment was in store for those attending the soil convention which for some weeks has been announced to begin on Monday morning of this week in the Chamber of Commerce Building at Los Angeles. Two of the men best informed in soil chemistry and physics were scheduled to lecture on soil conditions of California. These were Dr. Cyril G. Hopkins of Illinois and Dr. F. H. King of Wisconsin. Both arrived in California a couple of weeks ago and spent their time up till Saturday investigating soil conditions here. At that time Dr. Hopkins received a telegram calling him home on account of the serious illness of his wife, so that when the audience was called to order on Monday morning, Dr. J. Eliot Coit was compelled to announce this failure in the program. Dr. King, however, is a host in himself and is holding the attention of the big audience.

In addition Prof. J. H. Norton and Prof. C. B. Lipman are giving lectures and answering questions. The chairmen of the convention are Dean Wickson, Prof. Cook, C. C. Teague and J. W. Jeffrey.

The attendance is far greater than anticipated, and after turning many away from the Monday afternoon session, Dean Wickson who presided, announced that the Tuesday morning session would be held in Blanchard Hall. Dean Wickson called the assembly to order and spoke at some length along the general line of the need of more complete knowledge of soil physics and chemistry, and particularly impressed the truth that the recipe or formula that the farmer ordinarily seeks for every ill can never be given. The most that such a convention or any educational movement can give is a broadened mind and stronger grasp of the general principles underlying the general science of agriculture. The questions confronting the farmer are so complex that the following of a general "recipe" will lead to confusion and end in disaster. "Then let us during this entire week's program look for reasons for the greater principles which affect our industry, then with our best common sense learn the applications of these principles."

Dr. Wickson referred to soil conditions as of more importance than the aerial activities which are better understood, but the knowledge of the movements of air, of water, and of soil particles, is essential. It is no easy problem. In fact, it is one which must be solved by the physicist, the bacteriologist, and the chemist. He referred to these secrets as those of the great underworld of agriculture, and forcefully illustrated the comparison by referring to Dante and Virgil and their stories of life in the underworld. The Dante and Virgil characters had guides to show to them the mysteries of the lower regions. Guides are just as essential to show us the mysteries of the underworld of agriculture. The speaker said that the University of California had summoned two guides to show our growers these mysteries.

Dr. King is a conversational speaker and is not discomfited by asking of questions at any time. Some of the questions are not entirely relevant, but we believe, as a rule, they enable Dr. King to bring out most valuable points. He says that our problems in California are greater than those confronting the Eastern grower. The arid conditions of climate cause burning out of humus and necessitate greater attention to means of returning it to the soil. Especially is the clean cultural treatment against maintaining the proper physical condition of the soil. If productive power is to be maintained, some way must be devised to keep up the content of organic matter. Dr. King enforced the necessity for more water. He spoke of investigating some orchards which showed moisture only to a depth of two or three feet and below that the subsoil was so dry that the roots were unable to secure from it any material amount of soil moisture. One way to secure a greater quantity of water is to preserve the great waste of winter storm waters by shunting them into the lower gravel beds to be drawn out later for irrigation. Under present conditions more water escapes to the sea than is used.

But the Cultivator is going to press while the best of these talks are being delivered, and the meat from them will be used in later issues. It is a great embarrassment for a weekly paper not to be able to give full reports—as the daily can—but, as with the farmer, the Cultivator is gathering a fund of information which will be of inestimable value in the future.

JUDGES AT NATIONAL APPLE SHOW.

Five experts of recognized ability and continent-wide experience have been appointed by the board of trustees of the National Apple Show to pass official judgment on all exhibits and award cash prizes and premiums of a total value of $20,000 at the third annual exposition in Spokane, November 14 to 19. Professor H. E. Van Deman of Washington, D. C., is chief judge, his assistants being J. W. Murphy of Glenwood, Iowa, C. J. Sinsel of Boise, Idano, Professor S. A. Beach of Ames, Iowa, and J. Gibb of Kelowna, B. C. The judging will begin at noon on November 14.

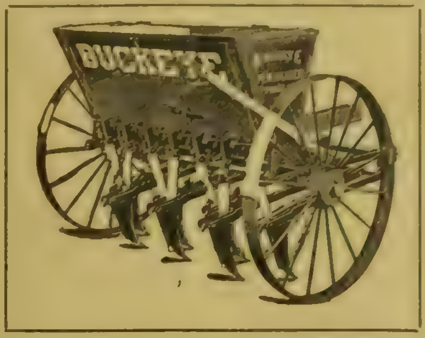
Pruning requires the most judgment of any operation connected with horticulture and should begin when the trees are ready to be set out. Before beginning to prune, study the shape of your tree and learn its natural inclinations and tendencies, so that you may do your work intelligently and overcome its shortcomings and failures.

Some orchardists in New England have heightened the color of fruit by the use of potash and Thomas phosphate powder, and it is likely that both these materials will tend to higher colored and higher flavored apples.

"Not twenty-five per cent of the trees set out return any profit to the man who sets them," declares an expert. Surely there is an encouraging hint in this for the skilful yet faint-hearted orchardist who fears an overproduction of fruit.

In removing large limbs, a good plan is to saw them off about three feet from the trunk to prevent splitting. Then saw again close to the trunk, so as not to leave a projecting stub.

For Use in Orange Groves and Vineyards
there is nothing better than the
Buckeye Fertilizer Drill
Set of Plates Furnished FREE with
Each New Drill if Desired
For Sowing Vetch and Peas



We have sold a great many carloads of these drills in Southern California and the Buckeye is now recognized by orange growers and fertilizer men as the best drill made for handling commercial fertilizer. Its low wheels, proper sized box, and large feed openings giving great capacity when desired, make it especially adapted to orchard use. This drill also made to successfully handle tankage.

Hawley, King & Co.
224-228 South Los Angeles St.
LOS ANGELES, CAL.
WAGONS, CARRIAGES, HARNESS, FARM IMPLEMENTS OF ALL KINDS,
AUTOMOBILES, POWER WAGONS

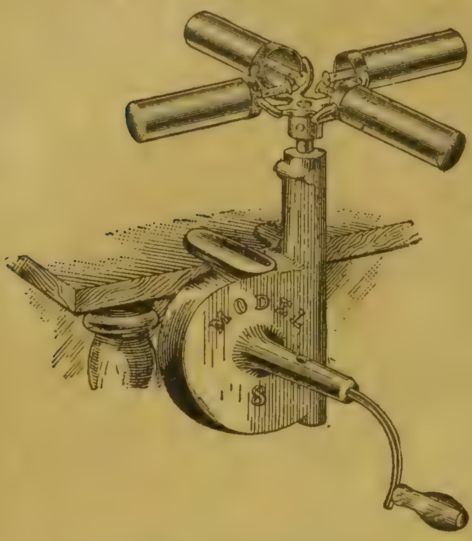
Wholesale 360 Acres Retail
Smyrna Park Nurseries
Ceres, California
A complete line of Nursery Stock. Special prices on Peach, Plum and Apricots. It will pay you to let us figure with you before placing your order for Spring planting. All stock guaranteed true to name.
Smyrna Park Nurseries
Campin & Moffet, Prop's.

5,000,000 Eucalyptus Trees
We have a large supply for **November Planting.** Our long experience as growers and shippers places us in a position to give our customers the very best service possible. This should mean something to you, Mr. Buyer. The proof of the pudding is in the eating; try us with your order. We are also large growers of **Apple, Pear, Orange and Lemon Trees.** Write for prices. Address
Covina Nurseries
312 Byrne Bldg., Cor. 3rd and Broadway, Los Angeles

Strong, Vigorous and Thrifty Walnut Trees
Well grown, true to name, and ready for immediate planting; of the New and Popular Variety, the
Placentia Perfection Walnut
A prolific and regular bearer of large, meaty, fine-flavored nuts, commanding from 2½c to 5c per pound more than the ordinary soft shells.
Choice trees, 3 to 14 feet, from 20c each and up; special low prices on lots of 200 and over. If contemplating planting a walnut grove, it will be to your interest to correspond with us at once, as the stock is limited and the price sufficiently attractive to clean it out quick.
Write today.
SAN DIMAS CITRUS NURSERIES R. M. Teague, San Dimas, Cal.

RHODES DOUBLE CUT
PRUNING SHEAR
Pat'd June 2, 1903.
THE only pruner made that cuts from both sides of the limb and does not bruise the bark. Made in all styles and sizes. We pay Express charges on all orders.
Write for circular and prices.
Dept. J
RHODES MFG. CO.,
GRAND RAPIDS, MICH.

Improved Babcock Tester



Babcock's Milk Tester, an extremely simple, light, compact and carefully designed apparatus, especially adapted for use in the dairy and also on account of its light weight to the Traveling Dairy Inspector.

The working parts are entirely enclosed in a handsome cast-iron case, and consist of but two cut gears, namely, bronze spiral gear and steel spindle with worm thread.

The Tester is fitted with swinging pockets and malleable iron head; it turns very easily without any vibration or jar and can be readily attached for operation to any table or bench. The bottles are perfectly horizontal when rotating.

	Wt. lbs.	
No. 1, 2 bottle for milk	14 each	$5.00
No. 2, 4 bottle for milk,	14 each	6.00
No. 3, 2 bottle for milk, No. 4, 4 bottle for milk, and cream	14 each	5.50
No. 4 4 bottle for milk, and cream	15 each	7.00

Prices include full directions for making test, bottle of acid, test bottle brush, acid measure, pipette and test bottles.

Creamery Machinery and Dairy Supplies

O. J. Weber Co.

225-7-9 East Sixth St., Los Angeles, California

Save from $1 to $2 per horse

that you now pay for clipping by doing it with this splendid

Stewart No. 1 Horse Clipping Machine

New and improved *1908* Model Ball Bearing and all enclosed gears running in oil. The price at your dealers' all complete, is ONLY $8.50

Every Horse should be Clipped Clipped horses look better, feel better, work better, and are easily cuffed. No machine ever made runs so easily, clips so fast, and lasts so long as this ***Stewart No. 1.*** It is fully guaranteed and must please or the purchase price will be cheerfully refunded.

All leading dealers have it. Ask to see it!

It is the greatest clipping machine of all time.
If your dealer hasn't it, write to us about it.

Chicago Flexible Shaft Co. Dept. H, **Chicago**

This is Second Hand Pipe

We can supply you with any size and quantity of **Standard** Pipe or Casing—all new threads and couplings—all stock guaranteed first class. Write for Prices and Particulars.

Live Stock and Dairy

Dairymen and stockmen are requested to write of their experience. Mrs. Sherman is always willing to answer queries and this, with experience of other workers, will make this department of greater value.

CALF TROUBLES.

By Mrs. M. E. Sherman.

When the calves are sick get them some new milk if you have to steal it from the separator man. I often find it requires good sitting down on the men to make them understand that racing on a cream check to make as much as possible each month may prove dear money. The calf from a registered cow sells for several times the price of a little new milk and when the case needs it, the new milk must go into the calf's stomach. Add to it the beaten whites of two eggs, one rennet tablet dissolved in one ounce of lime water, to each quart of new milk. If the calf still scours, add ten drops of formalin to the next dose of the milk. Give little and often until the calf is able to retain the milk. There are two things that are not safe to give a calf with scours, one is opium in any form, and boiled flour gruel. Both are sometimes recommended. We have used both and checked the diarrhoea with them and, also, killed the calf. We are unlike the medical profession in considering a case successful when the trouble stops but the patient is foolish enough to die. We wish the patient and the trouble both to get well.

Whiskey.

Sometimes a small tablespoonful of whiskey is added if the calf is weak and cold. A clean bed of hay with plenty of hay over the calf to keep it warm helps the little sufferer. Spray and clean up the surroundings carefully, using creolin in water, sponge off any filth on the calf and keep the baby sweet. Really it is a very safe practice to use rennet all the time in the separator milk. The tablets come in large boxes or they may be purchased in the ten cent form used for junket. One is dissolved in warm water and added to the milk at feeding time. If it is added too soon the calves will reject the curds and take only the whey part.

Separating.

When animals are sick remove the well ones but leave the sick ones just where they are. This seems a simple matter but nine out of ten people will remove a sick calf to nice new quarters and leave the well ones to take the trouble in the old quarters. This is a good way to infect new quarters with trouble. Conditions are certainly wrong when animals are sick, and to leave those that are not affected in diseased quarters is merely courting infection for them.

Abortion.

When cows are affected with contagious abortion in a herd there are always a certain number of calves that are dropped with scours. These calves have from the beginning of their lives a peculiar yellowish foul smelling diarrhoea. The place where they are stabled smells of fever. The calves are humped up and often breathe rapidly. Sometimes this trouble affects the joints and is called "joint ill" by the countryman. The same trouble may appear in colts and is cured in the same way. Few of the young animals among calves survive the fifth day. Those that do had better have gone, as they are stunted. These live along until they take cold and then usually die with pneumonia. Calves having this yellow or whitish yellow scours from birth are best mercifully disposed of at once.

Cream Separators, all sizes and prices. O. J. Weber Co., 225-227-229-231 East Sixth street, Los Angeles.

Causes.

It was first called a stable disease as it was found that when cows calved in the meadows that there was little of this trouble. When it is necessary to have the cows calve in box stalls care must be taken that the stalls are in good sanitary condition. The walls and floor should be scraped clean and everything removed. Then wash the woodwork with good strong lye water, hot as possible. When it has dried off spray it with corrosive sublimate water and then coat the whole over with a good thick white wash. Put in plenty of clean bedding hauled in from the stack. When the calf is dropped, tie the cord with a cotton string dipped in a five per cent. creolin solution. Cut the cord three inches long and bathe it well in the creolin solution. Wipe it dry with a piece of gauze or with absorbent cotton and then cover it with collodion to which one per cent. of iodine has been added. If there is much of this trouble in a herd, it may be necessary to go further and disinfect the cows previous to their calving. This is done by using a douche of warm water containing two per cent of creolin every day for a week before they come in. Dairying or any animal industry is a series of little things done exactly at the right time. Time in every thing we human beings do seems to be of more account than anything else. The "meant-to" folks are always left behind in the march to success.

ANGORA GOATS.

H. H. Baker, Lower Lake, Cal.

I would like to tell a little story of our experience with Angora goats, and, in part at least, the experience of many others. What I have to say may be the means of putting hundreds like me on the right track.

We traded for a ranch consisting chiefly of rocks, hills, canyons, oak, chamisal, manzanita and the loveliest poison oak. One kind neighbor said, "Anything would starve to death on your place but a goat."

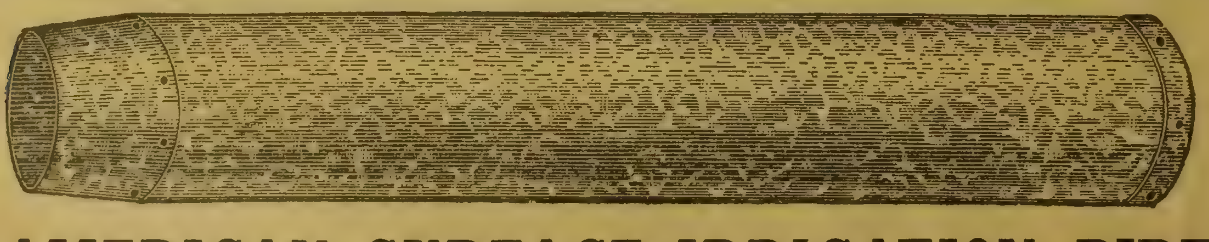
Goats, sure! of course, goats. We got a Government Bulletin on the "Angora Goat." Yes sir, in describing the kind of place a goat would select, if he had his choice, the author actually described our ranch in detail—must have been thinking of our place when he wrote it. We had it all, the brush, hills, rocks, canyons, water—everything, and then some.

We found where we could get the finest Angoras in the country; they come a little high and one of our local merchants, a good friend, tried to show us our error. Said we were foolish. He "could get us all the goats we wanted at $2.50 per head."

But we were obstinate. The California Cultivator said, "If you keep even a dog on the ranch keep a blooded dog." We got the registered goats in spite of the fact that our neighbor (a goat man) told us it wouldn't pay. "The hair was too fine, it would not weigh up with the coarse hair."

When we got our bunch it looked so pitifully small compared with the

Do your cows milk hard? Send 50 cents for teat expander. O. J. Weber Co., 225-227-229-231 East Sixth St., Los Angeles.



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349 Pacific Electric Building **Los Angeles, California**

bands of 1500 or 1600 that passed the gate, that hearing of some good grades for sale at $2.50 each, we bought about the same number of them.

After losing a few kids we still had an increase of over 100 per cent. In point of increase the grades had a little the better of it, every doe bringing a kid, and six bringing twins. Six good grade does that cost us $2.50 per head, $15.00, presented us with twelve kids. As the does had all been bred to a registered buck the kids were each worth more than the mothers, besides getting one clipping of mohair. All this within four months. What interest was this on the money invested?

But now comes the substantiation of the Cultivator's argument. We got our neighbor (the goat man) to come up and clip the goats, and he said he "never cut so much hair off so few goats;" that "it was so thick he could hardly shear it, it was like shearing a mat." In short we shipped it all to the factory in Lowell, Massachusetts, and when we got our returns, they told us the grade hair went 25 per cent medium fine, for which they allowed us 28 cents per pound. But the hair from the registered goats went 72 per cent medium fine, fine, and very fine. They wrote "this is all good stuff, and we have allowed you 40 cents for the medium fine, and 60 cents for the fine and very fine."

In conclusion, when we began we picked out the toughest, most bushy 25 acres we had, fenced it and turned the goats in. When they began on it there were parts a rabbit could hardly penetrate. Six months later they had made a park of it, cleared up that worthless brush, bringing it down to the farmyard corral in the shape of the finest kind of fertilizer, giving the grass a chance to grow in place of the brush, making it better pasture for other stock and the only expense to us, a little salt, and a few old sheds to get under when it was stormy. No doubt there is money in the hog and the sheep, but not on this ranch, and there are countless thousands of acres just like ours in California.

As soon as our goats cleared up the first patch we repeated the dose, fenced the next worst patch and so on. We are getting this ranch to look like something now—keep fencing more pastures with woven wire, straightening up the buildings and hauling out loads and loads of manure from the corral and putting it on the few acres of farming land, and the garden. We are making arrangements to purchase the adjoining 160 acres, and it is the goats that did it. They tell me in parts of the Orient a man's standing in society is determined by the number of Angoras he owns and I am not surprised at the information. Long live the goat. May his shadow never be less.

THE PERCHERON.

From Plumb's "Types and Breeds of Farm Animals" we take the following:

The more approved type of Percheron today calls for all the best features in the model draft horse. In weight mature stallions usually average from 1700 to 2000 pounds, and mares from 1500 to 1800 pounds. Exceptions, however, very naturally occur. Univers 33977 P. R., the celebrated show stallion, weighed in show form about 2300 pounds, while Chichi 40072 P. R., as a two-year-old in show form, weighed 2150 pounds. A most approved weight of mature mare is 1650 pounds. The height of stallions ranges from 15½ to 17 hands, and mares from 15½ to 16½. Tall Percherons are not regarded with favor, a lower set form being preferable. The color is usually a gray or black, but bays and browns occasionally occur. Fashion has caused some change in color production, there having been periods when grays were most common, while later blacks were much in favor. It is said that at the fair at Chartes, France, in February, 1877, one dealer had eighteen blacks, for which he asked about the equivalent of $10,000 for the lot, "and they were well worth it." Grays have been most popular in the United States and France, and dark gray may be regarded as a typical Percheron color. However, in spite of the criticism of black as a horse color, the opening years of the twentieth century have seen a great demand for black Percherons or dark iron grays, and most of the horses recently imported have been of these colors.

The body of the Percheron is characteristically compact and blocky of form, full in the chest and broad of back. Horses of the breed, however, often have steep, rather short rumps, with the tail set too low, and even with the best specimens the type of rump tends to unnecessary slope. In depth and fulness of body there is also a lack. The legs and feet are quite distinctive of the breed. No more shapely and well developed feet are found on any draft horse than on the Percheron. The bone of the leg is usually superior, but the cannons are not infrequently lacking in breadth and flatness, while the hocks may be fuller than is desirable. The clean limbs, free of long hair, account for much of the popularity of the Percheron in America. Percheron action at a walk is reasonably true and snappy. The trot, with good representatives of the breed, is carried with vim and life, the knees being moved strong and the hocks well flexed. The Percheron head and neck are typical of the most attractive draft-horse character. The eye is usually full and prominent, the forehead broad and reasonably full, the face straight or slightly dished above the nose, the jaw strong, the ears refined and attractively set and carried with animation. The graceful neck is usually blended with the body and cleanly attached to the head, being crowned with profuse mane and foretop. Those things which give special distinction to the Percheron breed are the head and neck suggesting the Arabian, the blocky body and droopy tendency of rump, the short smooth legs, the characteristic color, and the superior action. As a draft beast the pure-bred or high-grade Percheron ranks in France and America at the very front, with no superior.

A GROUP OF STANDARD BRED PERCHERON HORSES.
Owned by J. Crouch & Son.

Chairman A. G. Schulz of the fair committee of the various boards of trade of the Central California orange district, has issued a call for a meeting at Visalia to consider the details of the citrus fair which is this year to be held in the county seat. On this committee there are two representatives each from Porterville, Visalia, Dinuba, Exeter and Lindsay.

Sugar Beet Pulp takes place of green grass as a milk producer. 40c per ton. Los Angeles Sugar Factory.

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The Ornamental Garden

FREE ORNAMENTAL PLANTS.

In the interest of new plant introductions, the Bureau of Plant Industry of the Federal Department of Agriculture at Washington has now ready for experimental planting the following list of little known ornamentals:

Ipomoea fuchsioides. 20895. A tuberous morning-glory, indigenous to South Florida. It is of vigorous growth and covered for a large part of the year with brilliant carmine colored blooms.

Dendrocalamus strictus. 21548. A very useful and strong growing bamboo of India, attaining a height of 100 feet, occasionally forming forests. This species does not die down after flowering as do other bamboos. It endures cold, as well as dry heat, and is useful for the protection of embankments on account of its fibrous roots.

A POMONA VALLEY GUARDIAN

Clematis recta mandshurica. 22620. An ornamental, herbaceous perennial, 2 to 3 feet high, indigenous to China.

Astrapaea wallichi. 19897. An ornamental tree introduced from Madeira, having large pendant clusters of pink flowers.

Passiflora edulis. 25874. A climber indigenous to Brazil, producing an edible fruit.

Echium fastuosum. 26190. A shrub indigenous to the Canary Islands, cultivated in California for its ornamental value.

Heeria elegans. 7688. A trailing plant indigenous to Southern Mexico; suitable for hanging baskets and rockeries.

Jasminum nitidum. 7342.

Cyphomandra betacea. 25515. This species is an herbaceous shrub, indigenous to the mountain regions of Brazil, adjacent to Peru. The fruit is egg-shaped, about 2 inches long, with a tomato-like flavor. .

Macadamia ternifolia. 25845. A nut bearing tree from Australia, about as hardy as the orange. It is evergreen, and under favorable circumstances attains a height of 60 feet.

Olea foveolata. 25846. A tall shrub, indigenous to South Africa.

Quercus dentata. 26945. An oak, indigenous to parts of China, Korea and Japan. This is one of the species on which the oak-silkworm feeds.

Feijoa sellowiana. 26120. This dark evergreen shrub is indigenous to Argentine. In hardiness it about equals the orange. The fruit is green, tomentose and averaging 1 inch in diameter; it is very delicately flavored.' It succeeds well in California.

Pinus armandi. 27046. A dwarf pine from Western China.

Lonicera pileata. 27047. An ornamental, suitable for rockeries and shrubberies.

Caesalpinia nuga. 25803. An attractive, sweet scented, flowering scandent shrub, indigenous to the Philippines.

Bambos arundinacea. 27490. A bamboo, indigenous to India. This species attains a height of 30 to 45 feet, and being extremely spiny, makes an admirable living hedge, impenetrable by man or beast. It succeeds well on moist, rich soils, particularly on river banks. The seeds are used in India as food for poultry.

Juniperus pachyphlaea. 24624. A tree sometimes attaining a height of 60 feet, indigenous to the arid Southwest at elevations of 4000 to 6000 feet.

Greigia sphacelata. 24207.

Eucalyptus microtheca. 23495. Indigenous to Australia; a tree attaining a height of 150 feet under favorable conditions. Successfully resists frosts above 18 degrees Fahrenheit. Requires well drained soil and is well adapted for desert regions. The timber is particularly useful for piles, bridges and railway sleepers.

Panicum divaricatum. 24879.

Amygdalus nana. 24809. A dwarf almond from Turkestan.

Pinus peuce. 24338. An ornamental hardy pine of dense, regular habits and slow growth. Native to Southeastern Europe. Attains a height of 50 feet.

Phyllanthus acida. 23472. A small, very ornamental tree, indigenous to India and Madagascar, belonging to the family Euphorbiaceae. The fruit is produced in great abundance, and may be used in the manufacture of pickles or preserves. In hardiness the plant equals the mango and avocado.

Ruscus aculeatus. 22429. An erect liliaceous shrub, suitable for garden hedges; native of the Mediterranean countries, Central Europe and Southwestern Asia. The young shoots are edible.

Chionanthus retusa. 21617. Indigenous to China. A deciduous tree with Rhamnus-like leaves. In spring it bears white fringed, fragrant flowers, followed in the fall by masses of blue berries.

STREET-TREE LITTER.

There are those who profess to dislike all street trees because even the cleanest of them drop an occasional leaf. Seeing that every leaf on every tree eventually falls it is hard to see how we shall satisfy such unreasonable mortals and yet beautify our streets. Under some conditions a litter of leaves, especially small or finely-cut leaves, is somewhat desirable. A letter from Tree Warden Reed of Riverside, just to hand, says:

"This matter of litter from park and street trees is much complained about by some. But my gracious! do you know of anything worth having that doesn't cost something? The pepper is complained of as being a dirty tree, but the litter from it cannot be called dirty litter. True, it needs to be cleared from cement pavements and lawns, but if the parking space is not in grass or flowers and is level and free from weeds, the coating of fine pepper leaves, especially when thickly strewn with the red berries is, to my eye, a most ornamental carpeting. I have no patience with the careful sweeping of it up, leaving the bare ground exposed. If you are like-minded, I wish you would call attention to this sometimes, for the litter from the pepper is no more dirty than the carpet of needles in the pine woods. Also please call attention to the fact that lawns may be grown under pepper trees. They require a little more manure but that is compensated for by the protecting shade during hot weather. Some of our handsomest lawns are under pepper trees."—L. A. Times.

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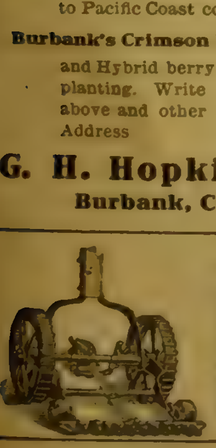

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Garden and Field Crops

SELECTION OF SEED POTATOES.

OF ALL the factors in potato growing, selection of seed is by far the most important. Some twelve years ago the writer undertook to improve and develop a potato along the same lines that he follows in improving his Shropshire sheep and Shorthorn cattle, using the best method of selection and giving the seed plat the best possible cultivation and irrigation in order to obtain uniformity of product. Since that time he has been selecting seed potatoes of the size and type which he wants to produce. As a 12-ounce potato is about ideal in size, seed potatoes of that size were selected from the bin in the spring and then 4 or 5 acres were planted in a special plat for seed, to be used for the main crop the following year. This plan was followed for twelve years with a potato (the Perfect Peachblow) which it was said would degenerate and ultimately run out; but that potato continued to improve during all that time.

Three years ago Prof. E. R. Bennett, a specialist in potato work from the East, came to our state agricultural college. He became interested in the work the writer was doing and freely complimented him on his success in potato production; but he wanted to take up and further improve the stock. Out of specially selected seed he selected perfect tubers and planted them in a field by themselves, and when the potatoes were ready to harvest we dug all of them by hand and kept the product of each hill separate. All hills that did not have 20 tubers of uniform size, without knot, crack, or rough end were discarded. No hill was selected unless it came within these requirements, and surprisingly few hills were found which passed muster. Enough were selected, however, to make about 200 pounds, and these were planted the following spring. When harvested it was a most marvelous row of potatoes. By pursuing this method it is hoped soon to have a potato that will make 25 perfect tubers to the hill.

Had we bred our Shorthorn cattle as we have been in the habit of selecting and breeding our seed potatoes, we would now have no breed of Shorthorns. If we used only the culls and scrubs to breed from, our breeds of stock would soon run out. These breeds have been brought to their present standard by selecting the best on scientific principles of breeding. One reason why potatoes have degenerated in the past is that the potato growers of the United States have planted their culls and screenings under the erroneous impression that such methods in seed selection would produce as good results as any other.

In selecting potatoes in the field, considerable dependence can be placed on the appearance of the tops. A large perfect top, with several stems of good shape and size, can be depended upon to have more tubers under it, and of more uniform quality and size, than a hill with a single stalk or one with small weak stems.

One of the essential and most important factors for success in this industry is the selection of perfect seed stock from the hill, in much the same way as seed corn is selected in the field from the best individual stalks. There is no other way to get true breed characteristics in potatoes except by selecting seed from the perfect hill, and seed should be saved only from hills producing a first-class marketable potato in the growing of which there is no waste of plant food. No manufacturer in this day of economy could stand the loss entailed by methods of manufacture under which he was compelled to cull out and throw in the scrap pile 20 per cent of his product as waste, and no one can expect the highest success in potato culture who adopts methods resulting in a loss of 20 to 60 per cent of his crop in culls and unmarketable potatoes. But this is what the potato growers of the United States are doing today.—Bulletin 386 U. S. Dept. Ag.

THE CROP FROM THIS MELON FIELD AT TURLOCK SOLD FOR $2,000
Courtesy Turlock Journal.

HAVE PLENTY OF PARSLEY.

There is no prettier or more useful addition to the garden border than the common ruffled parsley. The curled varieties of low growth are quite beautiful enough for bouquet green, as well as for garnishing. For out-of-door sowing the seed should be prepared by soaking in hot water for twenty-four hours in a warm place. Sow thickly in rows, one foot apart and a half inch deep, pressing down well with a smooth board, after sowing. It lives through the winter and will spring up a second summer if care is taken to cut back the flower stalks and to prevent it from going to seed. A few sprigs of parsley give an attractive appearance to even a platter of cold boiled beef or mutton, while a mound of well browned, carefully seasoned hash crowned with a sprig of the same dainty green, looks the aristocrat of breakfast dishes. Aside from its value as a garnish and seasoning plant, it is an approved tonic and clearer of the complexion. A sprig of parsley with a dash of salt eaten after indulgence in onions will entirely remove the disagreeable odor from the breath.—Coleman's Rural.

Everything looks favorable for the Escondido fair being one of the greatest attractions of Southern California. this year. From all parts Secretary Carroll is getting inquiries for space in which to make exhibits and especially is this true concerning live stock. It is almost certain that the exhibit of horses, cattle, hogs and sheep will be one of the largest ever given in California.

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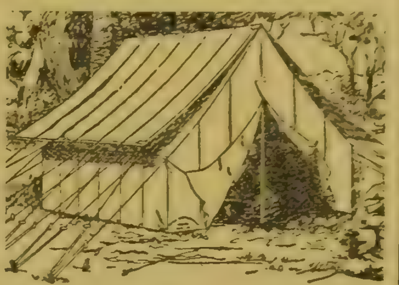

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W. H. Volck
A. J. Cook
J. Eliot Coit
Frederick Maskew
V. V. Le Roy
J. B. Wagner
R. C. Allen
S. J. Beals
F. L. Palmer
E. O. Essig
Roy K. Bishop
Ben F. Thorpe
C. D. Hubbard
Thos. R. Hanna
J. G. Gilstrap
Chas. A. Chambers
A. G. Goodacre

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Value of Scientific Work.

We doubt not the Pajaro Valley can show the greatest amount of consistent effort to subdue a pest affecting fruit trees of any fruit growing section in the world. Beginning in 1903 the apple growers determined to make a concerted effort to control the codling moth which had very materially lessened the output and still more lowered the grade of their fruit. Spraying with Paris green had been done prior to that but to a most unsatisfactory end, both in that it did not accomplish results and besides had injured the trees. The work was taken up by the apple growers association and the aid of experts of the state university asked. The university at that time had no scientific investigators, but under the direction of Prof. Woodworth students were put in charge and the work of investigation began. The first year, that is 1903, less than ten per cent. of the orchards were sprayed. During the next two years 33 per cent of the total acreage was treated. At that time, however, the injury to the orchards and to the vitality of the trees became so apparent that for a few years even less than 33 per cent was sprayed.

Chemists were put to work and practical orchardists experimented, and ultimately an ortho compound was produced which accomplished even better results with the codling moth and left the trees unharmed. This gave such an impetus to the work that in 1908 nearly one-half of the orchards were sprayed. In 1909 over 80 per cent, and the present year 95 per cent, or practically all of the orchards, have been treated. Unfortunately, according to the report of Horticultural Commissioner Volck, a few trees have been injured this year by the use of an arsenate which in itself was probably a good article but was unsuitable to Pajaro Valley conditions and proved injurious to a number of orchards, comprising however, less than one-fourth of the acreage of the Valley. As an indication of the magnitude of spraying operations in that Valley may be mentioned the fact that over 100 tons of arsenates were used.

Dry Farming Congress.

This is the week of the Dry Farming Congress in Spokane. It was formally opened by the pressing of a golden key closing the electric connection by President Taft at Beverly, Massachusetts, on Monday. Governors from several western states and representatives of six foreign nations, together with heads of many federal and state departments and experts from all parts of the country, are discussing what to do with the five billion acres of land in this and foreign countries which require dry farming methods. It is said that those attending represent fully the above mentioned acres. A semi-arid dry-farming exposition is being held in connection with the congress, at which prizes aggregating $10,000 are being offered.

Accomplishing Results.

California has occasion to feel somewhat restive under the work of the Department of Agriculture in furtherance of the Pure Food and Drug Act, especially with reference to the sulphur question. This office is almost daily reminded of other work by the Department under that act which is, we believe, most beneficial to agriculture. A large number of leaflets are issued reporting decisions and judgments showing that honesty will prove the best policy for those who are putting foods on the market.

For instance, we note Leaflet No. 525 refers to a judgment rendered against a certain wholesaler for selling milk which consisted in part "of a filthy, decomposed and putrid animal and vegetable substance." Another judgment was for selling adulterated preserved "whole egg." Others were for representing cod fish strips to be a foreign product whereas they were produced in America, and disposing of "choice evaporated apples" which had been soaked with water and contained quantities of core and seeds and other refuse to increase their weight. Cream and milk containing formaldehyde have been condemned, as have many cases of tomatoes and other canned goods because several ounces under weight given on labels.

These decisions are claimed to be one reason for the higher cost of living, but we do not believe such is the case, for ultimately the purer goods sold will more than offset any apparent low price for adulterated and inferior products.

The Auto and the Farmer.

The Rural New Yorker speaks of the automobile changing the character of meetings of fruit growers and farmers. As it says, formerly these meetings were pretty well tied down to one spot, the field covered being of very small radius. Now the radius is immensely increased and more elaborate programs with more representative speakers are made possible, and the attendance is vastly greater.

We believe that California farmers will not need to be influenced by action similar to that taken by Kansas bankers in deciding to discourage loaning of money on mortgages for the purchase of automobiles. California farmers, as a rule, are capable of deciding such questions for themselves. We do not think mortgaging to any extent is being done in this State for this purpose.

Stanford University specialists are taking up the question of poisoning through eating sulphured fruits, and will experiment on a bunch of twenty students who have submitted themselves to "poisoning." They are to be fed indefinitely on fruits dried by the sulphur process. That is, this fruit is to be made a large part of this diet. Each week they will undergo a thorough physical examination and comparison will be made with their condition at the beginning of the test. A similar experiment was performed last year at the University of California and this, we doubt not, will be used as a check on the former one.

Prof. C. W. Woodworth of the State University, is making investigations in the citrus orchards of Southern California as to the leakage of tents used in fumigation. This leakage has proved one of the most serious factors to be considered in the matter of effective fumigation, though material advance has been made by the adoption of the suggestion of Mr. Woglum that a tent of tighter weave be used, but at best there is great loss of material and effectiveness through leakage. It is to be hoped that Prof. Woodworth's work will lead to determining some method of preventing or greatly reducing this loss.

Advices from correspondents in Arizona indicate a medium crop of oranges which will run a large percentage fancy and all of good quality. Packing houses will open about November 10th to 15th.

The olive crop in the Salt River Valley of Arizona will not be up to the average, in fact, will be almost a failure on account of the dry spell of the past summer. Arizona rains come in the summer time, and drouth this year combined with the extra hot weather has resulted in premature ripening, over ten per cent. of the fruit being ripe already and dropping off. This means the olives will be valueless for pickling; we are not informed as to their oil qualities.

Too much stress cannot be put upon the value and importance of live stock in keeping up favorable soil conditions, as no country now known has been continuously successful in crop production without the use of manures from the feeding of forage and grain crops.

Reforming Through Agriculture.

Intensive French gardening is being used in certain reformatory schools in England. It has been found that the young fellows sent to the reformatory for stealing or petty crimes, raised in cities where they never knew of the first principles of agriculture, take to the gardening proposition far quicker and with more interest than was imagined at the start by the friends of the scheme.

We note in a clipping from the Daily Mail sent to us by Mr. Edward Berwick that these gardens have been established in many schools. One patch of less than an acre produced eighty-five pounds ($413.10) worth of products last year, thus giving to the boys not only education but money profit. Another school on a more pretentious basis which has 100 boys, has 100 acres of land handled in a larger way than the intensive garden plat. It is planted to orchard and small fruits and a portion of the land is given over to general farming. The school gives, of course, in addition instruction in carpentering, cabinet making and other trades. Almost invariably these boys take hold of this work and leave the school fitted to be citizens instead of criminals; many who were formerly a burden and expense because of their criminal proclivitives, graduate from the schools to the farms of England and Wales and help to advance the welfare of the country.

Oxnard Sugar Factory.

We regret that the view of the Oxnard Sugar Factory which appeared on first page of last week's Cultivator was not credited to the Oxnard Courier, which paper extended to us the courtesy of the use of the engraving. The Courier has shown much enterprise in advancing the interests of Oxnard and vicinity.

With scientific knowledge which can be acquired by experiments in supplying perfectly balanced plant food and maintaining soil fertility, the scientific principles of which are similar to those used by every successful breeder in feeding and fitting prize-winning stock; and with the proper proportions of plant food—phosphates, nitrogen and potash—in the soil as found in many parts of the West; and by the use of clover and alfalfa, there is no reason for those who contemplate engaging in the potato industry to fear the outcome.

Of making of associations organizations or congresses to advance various interests there seems to be no end. Most of them have a good object in view and should be encouraged. One of the latest is one to discourage the pasturing of hogs in fields or corrals with cattle. The hog is very susceptible to tuberculosis and the ease with which the disease is conveyed from cattle to hogs is causing the agitation.

The article on fumigation in last week's Cultivator was written by Prof. H. J. Quayle of the state experiment station force located at Whittier. Prof. Quayle is carrying on an extended series of experiments to determine the leakage of tents and other features connected with fumigation. The article in question was from an address delivered before the Covina Farmers' Club, which fact should have been stated when the article appeared.

The good roads propaganda is preached everywhere nowadays; the advisability of having good roads is no longer debated. States and counties now consider methods somewhat critically but they are united on the main proposition. Eighteen years ago it was an entirely different matter.

The apple show where apples grow is on the boards at Watsonville next week.

Agricultural News Notes of the Pacific Coast

Northern California

On September 23, W. T. Boulware of Biggs closed a deal with F. M. Turner of Bangor, Butte county, for the sale of his Bangor ranch for $11,220. This property consists of 1,020 acres of land and most of which can be irrigated.

Farmers in Shasta county are finding the "dipping cure" effective in eradicating hog cholera. After losing several head, Joseph Hunt, Jr., dipped his remaining hogs and stamped the disease out completely. Other farmers report the same results.

As an experimental shipment for Australia, Hunt, Hatch & Co. of Sebastopol, have packed seven dry goods boxes with apples. The fruit was packed between layers of sawdust. If the idea proves successful the freight charges will be very much reduced.

Having no faith in banks R. L. Boggs of Red Bluff, secreted $550 in currency and $500 in gold about his home. Fire destroyed the dwelling yesterday. Mr. Boggs has recovered four $20 pieces, melted together. Sometimes banks are better than hiding money away.

L. L. Russell, a recent settler near Biggs, has built a sorghum mill to crush over an acre of sugar cane. The crop of cane presents a most encouraging stand. Mr. Russell has a modern evaporating pan and expects to make a large quantity of syrup this year.

A. J. Pieters, of the Pieters-Wheeler Seed Co. of Hollister, left recently for Ann Arbor, Mich., where he will fill the chair of botany in the University of Michigan. Mr. Pieters has been connected with the California seed growing industry for several years and is thoroughly versed in all its branches.

The Lodi Sentinel says that the co-operative winery at that place will crush about 20,000 tons of grapes this year. Sugar test alone will be the basis for prices this year, and grapes that do not come up to 18 per cent will be refused. At the present price of wine the shareholders will have received, when the wine is sold, a total of $13.50 per ton, less the cost of operation.

The Italian Swiss Colony of Santa Rosa, has not yet abandoned its fight for the exclusive use of the word "Tipo" on its wines. The company has made a name for this wine they have put on the market, and recently the Supreme Court decided that any company had a right to use the name, as it was merely the Italian word for type or kind. The Italian Swiss Colony has asked for a re-hearing of the case.

As showing the importance of the Watsonville apple industry the Register says that there are more than 3000 people engaged in the packing business and the pay roll is almost $200,000 per month. From reliable information it is learned that the 2391 males draw an average of $2.25 per diem, which makes the pay-roll for men each day $5379.75. The 698 females are paid an average of $1.33 per day, or a total per day of $923.34. The total money paid per day is $6308.09. On this basis the monthly payroll is $198,242.70.

Mr. George C. Roeding, president of the Fancher Creek Nurseries of Fresno, has made arrangements with G. W. Pierce of Davis for 100 acres of choice land on which he will establish a deciduous fruit nursery. Its adaptability to this industry can scarcely be overestimated. Mr. Roeding will work harmoniously with Mr. O. W. Sanders, who is handling a fifty acre tract of the Pierce land and has been eminently successful along similar lines. Mr. Roeding enjoys a state-wide reputation as one of the leading nurserymen of the state.

Central California

A solid shaft of sôil, twenty-five feet in height and eighteen inches in diameter, is to be used by the people of the Linden section as an object lesson of the character of the land there.

The Lindsay Fruit Association held their annual meeting September 17. The following board of directors was elected: H. C. Morrison, G. V. Reed, G. H. Merrifield, J. H. Turner, H. C. Morrison was elected president; G. V. Reed, vice president; and Rob Eddy, secretary.

Harry Quinn of Delano recently made a shipment of some of his thoroughbred Spanish Merino rams. There were thirty-five fine animals in the lot which were sent to Placer county. Mr. Quinn raises large numbers of these fine animals each year, for which he finds a ready market.

A large lot of Watsonville Newtown Pippins sold in London recently at the rate of $2.88 per box, which is a very fair price. Manager White, of the Earl Fruit Company, reports a car of four-tier apples sold at $2.88 per box, while a car of four and one-half tier sold for $2.40 per box in the same market at about the same time.

The Dinuba Farmers' Union Packing Company has just installed and started operating a raisin drier which is sure to be a great boon to the members and growers generally. The new drier is operated by steam and has a capacity of 40 tons every twenty-four hours. Raisins are dried in six hours from the time the trays are run into the house.

The annual meeting of the Central California Citrus Exchange was held September 15. The following directors were elected: D. G. Overall, G. S. Berry, F. F. Hostetter, L. S. White and H. C. Morrison. Mr. Overall was elected president; F. F. Hostetter, vice president; C. H. Grassly, secretary and manager, and the First National Bank, treasurer.

Official headquarters of the Kern National Forest, embracing 85 townships, or 3600 square miles, with a total of nearly 2,100,000 acres, lying partly in Kern and partly in Inyo county, has been opened in Bakersfield. The Kern National Forest is a part of the Sequoia National Forest and was formed July 1, 1910, by proclamation of President Taft.

Among the various profitable industries of Tulare county is the raising of hogs. Recently S. O. Walker sold fifty-four head of hogs for the total sum of $1042.92. Mr. Walker has hit upon the scheme of feeding his hogs soaked barley, and from the time he purchased his hogs until he sold them, they gained at the rate of two pounds per day on that diet.

The receipts from the late state fair are estimated at $51,000, of which amount approximately $32,000 goes to the Fiesta of the Dawn of Gold committee, as against an expense list for the committee aggregating about $60,000—the deficit to be made up by a pro rata draft upon the $70,000 guarantee fund subscribed by a number of the leading business interests and civic organizations of Sacramento.

One would suppose that the pear blight had put the production of that fruit out of business, but if we are to believe The Hanford Sentinel, pears are still quite an item of production in Kings county. During the past two years the trees that were not totally destroyed by the blight have taken on new vigor, and this season the crop of pears has been good. The Klein Fruit Company of Los Angeles has shipped from Armona ten carloads of the fruit, green, and it is said that had their buyers known where to go for the fruit, twice that amount could have been secured.

Southern California

The cotton gin erected at Durbrow by the Coachella Cotton Company is completed. The machinery is in the building and ready for inspection. This is a two-stand gin with 70-inch saws.

Howard & Smith, Los Angeles, have been granted a patent on cement pots and it is stated that these pots have proved a success, especially in the large sizes, 9-inch to 24-inch.

R. M. Cartwright of San Luis Obispo has recently purchased the pure bred imported Saanen buck goat, Andreas Hofer. He stands thirty-eight inches at shoulder and has a great record as a dairy sire.

United States Entomologist Wildemuth, located in the Imperial valley, stated that the alfalfa worm which is causing the growers much trouble is rapidly dying off, due to the bacterial disease which is attacking the worms.

There are about 12,000 acres of limas on the mesa lands between Los Angeles and the ocean, as compared with 10,000 last year. Early threshing will be the rule this season as the growers were caught last fall by the early showers.

The Rialto Orange Company has just distributed among its members the returns of the first July pool of Mediterranean Sweets, amounting to some $35,000. The "Orchard Run" in this pool paid the growers $2.42 net per box, and the "Standards" $1.67 net per box.

The annual meeting of the stockholders of the Rialto Orange-Lemon association was held September 15. A new board of directors was chosen which elected the following officers: Thomas Moffatt, president; George A. Brua, vice-president; W. H. Glasscock, secretary.

Extensive experiments are being made in fumigation outfits in Orange county by the Department of Entomology of the University of California. The tests will be in regard to the leakage of fumigation tents and the effectiveness of hydro-cyanic gas in different kinds of weather.

The present bean crop, in the Santa Maria section is undoubtedly the best it has seen. It is now being harvested, and everything looks good except possibly the price for the disposal of the crop. There is also an abundance of hay, and prices are moderate. Some of the ranchers are holding their supply for an advance.

The Golden State Canning Company of Ontario, finished up work on peaches September 23. The place will not close down but begin work at once on tomatoes and put up some thing like 20,000 cases. Manager McCann of the cannery states that last year and this where growers irrigated their crops they harvested big yields. The cannery people pay $8 per ton.

The Whittier Citrus Growers' Association is jubilant over the prospects for the coming year. There is an expected increase of 75 per cent. in the output from Southern California this season. The association numbers 175 members, and controls about 647 acres of orange and lemon lands. This year in the neighborhood of [illegible] carloads of oranges and lemons will be marketed.

The foot hill orange growers have organized the Cucamonga Foothill Orange Association. The directors chosen are: Messrs. P. A. Demens, J. Dederich, E. Gcerlitz, A. J. Ledig and W. C. Belden. P. A. Demens was elected president, J. Dederichs, vice-president, and W. C. Belden, secretary. The association has made a contract with the Redlands Mutual Orange Distributers to handle the fruit for the coming season and work on a packing house has already begun.

The Coast

Farmers and fruit-growers of Washington State have organized a society for the purpose of importing labor to help them save the crops.

A large tract of land has been purchased near Kirkland, Wash., by J. J. Bonnell of Seattle, Wash. He intended to put up a range of about 20,000 square feet of glass.

The big government cement-mill, which has been in operation for five years at Roosevelt, Ariz., making cement for irrigation works, has fulfilled its mission and is being torn down.

The Texas Citrus Fruit Growers' Association accepted the invitation of the State Horticultural Society of Florida to attend the meeting of that society in Tampa, January 31.

Fall seeding has begun in the Palouse Valley in Washington. Despite the dry weather and the fact that the ground is dry and dusty a number of farmers have started seeders, and are "dusting in" their fall wheat.

In Montana, road experts have found that crude sugar-beet syrup sprinkled over dirt roads that were dusty, makes the surface impervious to rain and two coats a year will keep the road in first-class condition and at very low cost.

Ross Magnus, a man 80 years of age, rode from Virginia to Colorado on horseback to locate a farm on government land. He carried a roll of $5,000 in currency in his boot-[illegible] and after selecting his farm, paid all of the fees at one time.

One hundred and twenty thousand one and two-year-old apple trees of standard varieties will be planted on 1,500 acres of land in the foothills near Waverly and Fairfield, Wash., next spring by the Commercial Orchard Company of Washington, organized in Spokane with a paid up capital of $100,000.

A press dispatch from Tacoma, Wash., says that 200 carloads of apples were blown from the trees in Yakima valley September 15 by a terrific windstorm. Many trees were uprooted, while others were badly damaged. Much of the fruit being ripe or nearly so, can be utilized for vinegar and cider manufacture.

What to do with this year's fruit crop in the immediate vicinity of Pendleton and along the Umatilla river in Oregon, is a problem that now confronts the growers of that section. It is estimated that there are 100 carloads of apples alone which will soon be ready for market. Organize an exchange, and follow in the wake of the California orange growers.

The chairman of the Australian Water Supply Commission is in Europe trying to secure 2,000 British, Italian, and Danish farmers, who understand irrigation, to settle on 2,000 farms in northern Victoria. Mr. Elwood Mead, a well-known irrigation expert, formerly residing in the United States, is chairman of this commission, and through his efforts large tracts of hitherto unprofitable desert lands in Australia have been reclaimed.

Ranchers in the Yuma Valley have demonstrated that alfalfa seed for market is a profitable crop. F. E. Elliott, one of the seed producers, returned recently from a trip to San Francisco and Los Angeles, bringing with him orders for three carloads of alfalfa seed, or 90,000 pounds, at fourteen cents per pound. He has also received from Kansas City an order for five carloads at fifteen cents per pound. Alfalfa is producing from 500 to 800 pounds of seed to the acre in Yuma Valley, and in addition to the seed cutting the fields produce five to six cuttings for hay.

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If you were going to erect a large building, you would consult an architect—if you wanted some legal papers drawn up, you would go to a lawyer—because these men have made a special study of their respective professions.

The same principle applies to the feeding of your chickens. Presumably you have not the machinery or formula for making an egg food so that it will be just what your hens need.

That's why you should buy COULSON'S EGG FOOD. It is the result of years of study—it is scientifically mixed by experts with the right proportions of the various ingredients to give a balanced ration.

COULSON'S EGG FOOD means a healthy stock, with great laying power and eggs of quality. Saves you the time of mixing—provides a better feed—makes more eggs—means more profit, as COULSON'S EGG FOOD more than pays for itself, through making hens lay to their full capacity.

It is especially advantageous to use it at the present time, when the price of eggs is beginning to increase, and when also you are anxious to have your hens in good condition for the molting season.

Hens eat only what they like, but there are many foods they must have, and which must be mixed with their regular food so that they get the desired quantity. The only way the food can be mixed is by improved machinery—that's why you should feed COULSON'S EGG FOOD.

Get it at your dealer's; anyway send for our Catalog which tells about the famous Coulson products and gives valuable information about Poultry Raising.

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Practical Poultry Culture

BREEDING BARRED PLYMOUTH ROCKS.

D. T. Wieland, Moneta.

Ever since the origin of the Barred Plymouth Rocks their breeding has been more or less experimental. A great many breeders temporarily enter the field each season, buy a few birds or a setting or two of eggs from the best stock exhibited at one of the minor shows, claim to be breeders, mate a few pens, find out it is not as easy as they thought it would be, get discouraged, denounce the breed and quit. On the other hand, the breeding of these birds has been reduced to a science by those who would obtain success, using the knowledge gained in the past as a guide in mating.

Very few breeders give out information that will help the amateur to breed better birds. They think it enough to see what the buyer wants and use the knowledge they have acquired in breeding to further their own interests. They could give to the amateur a great deal of information that would start him on the highway to success if they only would.

A TYPICAL BARRED PLYMOTH ROCK PULLET
Property of D. T. Wieland, Moneta

For the past 20 years I have been steadily improving my flock. I would like to tell you how I mate for best results, but it would take too long. I will just give a few hints as to how I started, what sort of stock to buy, etc. I paid $31.00 and express charges for five Barred Plymouth Rocks, four females and a male, to a breeder who had been a regular exhibitor for three years to my certain knowledge, always winning a large share of the best prizes. For two years I followed his advice on mating with good results, then I thought I had some good birds, so the following winter I showed a few fowls, and, to my great surprise, took some of the best prizes. My knowledge of a poultry show was very limited. In fact, I just sent in my money, told the secretary what I wished to show and he made the entries. I went to the show, knowing not a soul, followed the judges at a safe distance for some time while judging the B. P. Rocks, listened to the Barred Rock exhibitors as they were discussing the merits and demerits of the different winners. I got a little information in this way, read all the poultry papers I could get hold of and finally, getting a little braver, began to ask questions of breeders I thought were posted, attended the shows as the years rolled around, and now, after 20 years, am beginning to think I have learned a few things about Barred Plymouth Rocks.

To those undecided as to what breed to begin with, let me give this advice; take the one you fancy. Yet I know that if you start with a good strain of B. P. Rocks you will stay with them. You cannot help it. The reasons are many. Here are just a few of them.

They are a most attractive fowl for the fancier and an ideal bird for the student of feathers to work upon. Both fowls and chicks are hardy and pullets mature early, beginning to lay at four and a half months old. They are great winter layers, are not affected by weather conditions as most fowls are, laying just the same, hot or cold. This requisite of comfort accounts partially for their incessant and persistent laying the year round. Their warm clothing tells why they can be kept at less cost than other breeds. They are good setters, very gentle and easy to handle, careful of their broods, yet easy to break of broodiness. If you pen them at the beginning, they will lay again in eight to ten days. They are free from disease, the medium sized fowl that the public demands, with fine flavored flesh, yellow skin and shanks. They have grace and beauty unexcelled, and business and beauty so combined that no breed can surpass them where an all purpose fowl is wanted.

THE HEN AND THE FARMER.

The Saturday Evening Post of August 6th, published a most excellent article on "The Farmer and the Cost of Living from a Railroad Man's Point of View." The writer is Mr. B. F. Yoakum, chairman of the executive committee of the 'Frisco and allied lines. The following abstract is clipped from this article:

"After a careful investigation, it is estimated that during the past year the farmers received and the consumers of the city of New York paid, for the following articles of food, approximately the amounts respectively shown:

	Received by Farmer	Paid by Consumer
Eggs ______	$ 17,238,000	$ 28,730,000
Coffee _____	2,402,000	12,009,000
Rice ______	1,354,000	6,191,000
Cabbages _	1,825,000	9,125,000
Onions ____	821,000	8,212,000
Milk ______	22,912,000	48,880,000
Potatoes __	8,437,000	60,000,000
Meat, Poultry ______	219,300,000	291,000,000
Total ___	$274,289,000	$464,174,000

We publish this table as an illustration of the profit that the hen, so long neglected by the farmer, is paying him. The farmer received for eggs 59 per cent of that paid by the consumer and in meat and poultry 75 per cent. The next best profit is represented by milk, on which he received about 46 per cent, while in vegetables he obtained but 15 per cent of the retail price.

Shall the farmer continue then to neglect the hen?

A realization of the value of a well-kept flock of poultry is of greatest importance to him. It is possible that the disreputable appearance of an old-time barnyard flock of mongrels is the real reason why no more attention has been paid by farmers to poultry. We assume this for the reason that we have often noted that when pure bred flocks are kept the farmer is always ready to show his houses and yards to the visitor and will continually speak of the excellent laying record of some pen or bird.

CACKLES AND CROWS.

September 13 work was commenced on a brick, two-story addition to the building of the Coulson Company on upper Main street, Petaluma. The new building will be 40x61 feet in dimensions. It will be constructed on the east or river side of the present big factory and warehouse building of the company.

Let farmers take more interest in exhibiting poultry at the county and state fairs. Pure bred fowls will advertise your farm.

Dispose of the surplus cockerels and save the food that they will require this winter. If they are not good enough to sell for breeding stock fatten them for the market.

If your poultry houses are reasonably tight, it would be a good thing to burn some sulphur to get rid of the mites and lice. The tighter the house is the more thorough will be the effect of the fumes of the sulphur.

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Boys and girls attending school have splendid opportunities for poultry raising. Except the close attention that must be given to incubators and young chicks, school hours do not stand in the way of poultry raising. Ambitious boys and girls can solve the problems of poultrymen.

There are possibly as many failures in poultry culture as most any other business one can mention. In spite of that fact, however, the "know how" breeders have made good this year in all portions of California. The business is constantly growing, and is rapidly assuming big proportions, particularly in the northern part of the state.

J. R. Schooley of Fullerton who for some years has made the breeding, feeding and rearing of poultry a study, conducting his experiments quietly on his home place on Walnut Avenue, Orange, is building a modern hatchery and poultry plant. His present plant is being rebuilt on a large scale and adapted to up-to-date methods. Last spring Mr. Schooley hatched over four thousand chicks, largely from eggs from his own breeding pens of thoroughbred Barred Plymouth Rocks. His pens now contain breeding stock selected from eight hundred choice fowls for next season's trade in eggs and chicks.

FEEDING GREEN BONE.

Green bones are bones fresh from the butcher, with the adhering gristle, meat, etc. They contain the natural juices as well as the adhering substances, making them superior to the bones that have lain on the ground for a while and lost all the natural juices or animal matter. Green bones are also soluble and capable of having the mineral matter digested.

It has been proved upon analysis that green bones contain in abundance the ingredients which go to make up the growing chick, and in close proportion the different parts of the complete egg. The lean meat and gristle form the white of the egg and about sixteen per cent of the yolk. The marrow and other fat on the bones yield all the necessary lime salts for the shell and the requisite phosphates for the interior of the egg.

According to an analysis by Prof. James E. Rice, the nutritive value of green bones is 1 : 5.3, which is greater than any other form of meat—meat scraps, dried blood, dried fish or animal meal.

CHICKEN MANURE ON THE GARDEN.

Hen manure is an excellent fertilizer to use in the garden and may be used on any of the crops ordinarily grown. While chicken manure is generally considered a "strong fertilizer," it can safely be used in much larger quantities than are usually available.

The best way to apply the hen droppings would be to apply after the garden is spaded or plowed, and rake or harrow it into the surface-soil. The ideal way to use this fertilizer is as a top dressing, and it would be a mistake, in our mind, to plow it under. The plant food in it is more readily available than that contained in barn yard manure, and as it will be readily carried down into the soil, it should be applied to the surface. The roses and other flowers, as well as the vegetables, will be benefited by a light dressing of this manure.

CURE FOR GAPES.

One poultry raiser says in "The Farmers' Guide" that he shuts his chicks affected with gapes in a box and sifts lime and sulphur on them. This will cure them.

Another poultryman gives this method: Take four or five chicks and place in large candy pail or a common nail keg and placed over top a piece of cheese cloth. Then sift a tablespoonful of lime in on them. They will do a good deal of fluttering but you need not doctor them again. Do not leave them in keg more than two or three minutes. I have used this cure for fifteen years and have never lost any chickens from gapes. I also use lime in the drinking water.

FALL APHORISMS.

In a land where all time is summer, we are quite apt to forget the passing of the seasons, or at best neglect to give them serious attention. Here winter is not the serious problem it is in the region of ice and snow, yet it is not without its responsibilities. The advent of our cold and rainy season certainly admonishes the breeder to get his poultry plant in good repair for winter; it is certainly none too soon to get at it.

Good sanitation in the poultry house and yards is of the first importance—its observation is not only good insurance against obnoxious insects, but it is also the best preventive against disease, and certainly induces the comfort and profitableness of the flock. Go at it as though you owed filth and vermin a grudge. Clean the houses thoroughly and then give a coat of whitewash inside and out. Throw out all old nesting material and burn it; then replace with new, and add tobacco stems or some good insect powder for lice prevention.

The poultry house should, of course, be rain-proof and free from draughts; there is no time like the present for making repairs affording insurance against both. To avoid dampness it is also a good plan to bank the dirt around the houses. In the yards provide earth walks or boards, so that on rainy days it will not be necessary to wade through slush and mud. Also see to it that all feeding and drinking appliances are in good repair and clean. And finally sprinkle unslacked lime over the ground in yards and runs, and the chances are your poultry will come through the winter in good shape, and you will have lessened your own labors.

FIGHTING VERMIN.

The warfare against lice and mites in the poultry-house is best begun in the spring or early summer and continued all the year. If, during the first few warm sunshiny days of spring, the houses are given a thorough sweeping and cleaning and some disinfectant like a good coal tar preparation is used, they will remain sweet and sanitary for a month or more if the droppings under the perches are frequently and regularly removed and plenty of fresh air can circulate through the house.

POULTRY SHORT COURSE.

The week of lectures and demonstrations in the poultry husbandry short course will be Oct. 17-29, at the State University farm at Davis. There will be lectures by M. E. Jaffa, H. A. George, S. D. Wilkins, Mrs. Basley, and others. Examples of judging and scoring, mixing of feed, incubator practice and other interesting factors will give interest to the week.

The farmer who has land to till gets a lot more out of a poultry deal than does the man who is a poultry specialist and nothing more, because he can use the droppings to keep up the fertility of his land. Poultry droppings are good for anything that they are put on, and especially so for cane fruit, strawberries and cabbage. It you expect to put out a patch of strawberries this fall, save the droppings from the hen roost this summer, and then plow it under on your strawberry ground. The writer has a patch that was so treated; the plants were set out on the 20th day of last December, and now they are beginning to turn off ripe berries and the amount they produce is the wonder of all who see them, the vines are beautiful in their luxuriance.—N. W. Poultry Journal.

Your poultry house should be in a dry place where it will get the sun. Let it face the south and have plenty of light.

Indian Runner ducks are noted for being great layers. They mature rapidly and are very hardy.

Never send dirty eggs to market. It pays to see that your eggs are clean.

Cabbage is a good green food for laying hens and pullets.

EGG MAKER

I Have Ten Hens and Get Ten Eggs Each Day

by feeding "Lee's Egg Maker." Without waiting another day, go out and count your hens—count them carefully. For a week keep an accurate daily record of the eggs you get. The guarantee below means *you*.

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that no matter what you are feeding, and regardless of [illegible] you are getting at the present time, if **Lee's Egg Maker is added** to the daily ration — make a part of it — the increased egg yield resulting therefrom will more than pay the cost of the Egg Maker, cost of labor required, and **100 per cent profit** on said labor.

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The amount of good *digestible* protein is what counts for results in poultry feeding, and America's big feeders say Lee's Egg Maker contains more *digestible* protein than any other poultry food they can buy.

Lee's Egg Maker is almost entirely a meat food and with an actual tested protein feeding value in *excess* of *80* per cent, and you'll find in it the essentials entirely lacking in other prepared poultry food. The best feeding authorities in the country endorse it—and *use it*. *You* can't afford *not* to feed it, whether you have 10 hens or 1000, the proportionate profit would be the same.

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We have the Los Angeles Agency of the DeLaval Separator Company, complete stock of DeLaval Cream Separators and parts, and DeLaval Dairy Supplies of all kinds at our salesrooms. We install Dairy Plants complete with power plants and water plants for any services and capacity. We are now supplying the largest Creamery Companies with bottles and caps, and have cars coming every month from the Factory, insuring prompt deliveries. Write or call for sample sack of Wyandotte Cleaner and Cleanser. It is the dairyman's friend.

It will be to your interest to call and inspect our stock or write us for catalogue and prices before buying.

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Vetch, Fenugreek, Canadian Field Peas, Burr Clover

If you are in the market for any of the above for cover crop, write us for prices, stating quantity, and we will make you close prices.

We also have several tons of small Yorkshire Hero peas that we screened out of our seed stock which we are offering at $3.00 per cwt. If you would sow them in your orchard you could harvest a crop of green peas and get a fancy price in the San Francisco market and also fertilize the orchard.

Now is the time to plant onion and cabbage seed. We can furnish them in any quantity.

Aggler & Musser Seed Company
113-115 N. Main St. Los Angeles, California

Bees and Their Care

THE MANAGEMENT OF BEES.

J. W. Ferree, Newhall.

There are three methods, the scientific, the let-alone haphazard, and the midway, that is a little of the scientific and a good deal of the haphazard, I believe most commonly practiced in California. Location and kind of bees are very important features, which have not been given the attention they should have. In the early spring the building up of each colony and having them free from disease is of the greatest importance. If in single hives when honey is coming in so as to stimulate them to brood rearing then is the time to attend to this. If early honey is scarce, stimulative feeding should be resorted to, which may be done in different ways. The best way is to have plenty of honey in the hive—breaking the cappings on one side of a comb every three or four days will stimulate them about right. If they have not plenty of stores, feeding honey or a mixture of honey and sugar is necessary. The best way is to feed every evening just a little more than they will use each day.

As soon as they have brood in three or four combs, spreading should be attended to, which must be done very carefully or more harm will be done than good. I repeat, it must be done very advisedly or it had better not be done at all. When the weather is warm enough for the bees to take care of more brood, move the comb of pollen on one side of the cluster one space and insert an empty comb, or one with just a little new honey, or one with a little sealed honey, with the capping well broken. When this comb is used for brood and the bees are able to care for more, repeat the operation.

As soon as the colony is populous enough move the pollen comb on each side of the brood nest one space and insert empty combs. Repeat until the brood chamber is full of brood. If any combs are full of honey so they can't be used for brood they should be lifted out and taken care of, which can easily be done by putting them in a super and setting them on top of a colony that is ready for more room than the brood chamber affords.

When the brood nest is full and the weather is cold and unsettled, what to do next and be happy while doing it is what I have never been able to fully decide. To give them a super of empty combs is bad and to give them foundation is worse. A few combs of honey to put in the super helps some, at least it seems so. To give them a half depth super of combs is good, but necessitates a great many shallow supers and combs and considerable work. When these are full the colony is in fine condition to give a full depth super. The shallow frames of brood are good for building up weak colonies. The next best way is to put four or five combs in the super, put in a division board and let the quilt or gunnysack drop down and cover the remainder of the frames in the brood chamber.

If the bees are wintered in two-story hives the manipulating of the combs will not be so necessary to give them room. For comb honey production keep the shallow frames on until white honey is coming in freely, then take off the shallow frames and put on a super of sections. One super at a time is enough unless colony is very populous. The shallow combs which have brood in them may be used to build up weak colonies, the others to be extracted. When sections are half or two-thirds full lift super and put on an empty one. When the second super is well on the way put on another and thus tier up or rather tier down until the white honey flow is nearly over, taking off sections from top as fast as they are ready to come off, not waiting until every section in super is sealed. Unfinished sections may be put in the outer side of new supers, or supers may be entirely filled with unfinished sections and set on to be finished. Work to get sections finished before the white honey flow is over. Set on a super with shallow frames (which can be extracted) for the amber honey at close of harvest. Full depth combs may be used instead of shallow ones but are not so good, for in extracting, work hard as you will, some will be ready before others. Take a few full combs from those and put in empty combs for a foundation. I generally have half or more of mine three stories high before commencing to extract.

HIVES.

It is conceded the country over that the Langstroth is the best hive and practically all supers or surplus chambers, and other fixtures are made for this hive. The hive was invented about the middle of the last century by the Rev. L. L. Langstroth, and practically no other is in use by the large and successful beekeepers of this country, as well as in many other countries. The name Langstroth refers to the size and shape of frames and the body. There is no patent on the Langstroth hive, and some manufacturers push forward hives of their own make upon which they have patents, as there is more profit in their manufacture, but it would be inadvisable for the beginner to adopt any of these if it is contrary to the verdict, as shown by their practice, of all the well-informed or extensive beekeepers of the land.

The Langstroth Dovetailed hives consist of a bottom, body with moveable frames and division board, cover and any style of surplus super desired according to the kind of honey produced. For the beginner the super arranged with shallow extracting frames is the best, as it is much simpler to use.

The bottom should be of heavy material and have a bee space and entrance on one side of three-eighths inches, and on the other a deeper one to use for more ventilation in the summer. The reversible bottom boards project in front of the hive two inches, affording an alighting board for the returning bees, and is furnished with blocks for contracting the entrance during the winter.

The dovetailed hive bodies are made in two sizes, one for eight frames and the other for ten, both furnished the same with metal rabbets for the projection of the top bars of frames to rest upon, and hand hole cleats that they may be readily carried. Many bee-keepers, particularly those who produce section comb honey, use the eight-frame size, but for the beginner, the ten-frame is preferable as it requires less attention and more room being given, swarming is diminished somewhat. The top bars of frames have a slot into which a strip of comb foundation, which is simply a thin sheet of pure beeswax with the imprint of the base of cell, is inserted and secured by a long wedge-shaped strip. In shallow extracting frames which have thinner top bars the foundation is secured in the groove by melted wax. From this starter the bees build straight combs so that each frame can be removed separately with no difficulty.

In buying bee hives, those who are not familiar with them should order at least one hive made up in order, to see the proper putting together.—Rural World.

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For with fertilizers such as we supply, you will get more per acre no matter what the product and of finer quality. Often you can double the farm's production that way. Let us tell you about it.

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General Agriculture

TALK AND PRODUCTION MEET.

An Agricultural Fair and Farmers' Institute at Lancaster Unites the Two.

On September 28 and 29 there was held a Farmers' Institute and an Agricultural Fair at Lancaster that was just a little out of the ordinary. Under the talking program of J. B. Neff of the State University it certainly furnished a feast of reason and flow of soul calculated to establish goodfellowship and at the same time disseminate just the information that the Antelope Valley people will appreciate in the exploitation and development of their agricultural and horticultural resources. The Farmers' Fair Association, covering in its personnel the settlements of Lancaster, Fairmount, Elizabeth Lake, Del Sur, Palmdale, Little Rock, Big Rock, Lancaster, and all the intervening country, furnished a splendid object lesson in the agricultural capabilities of its membership. On the opening day the address of welcome was made by Ira G. Gorham, to which Mr. Neff made a happy response. The two days sessions were replete with many interesting talks on subjects particularly interesting in view of prevailing conditions of soils and climates in the Antelope Valley. The exhibits were fruit and vegetables of the greatest variety, alfalfa, chickens, geese, hogs, honey, and also cotton of the very best quality. The Fair Committee consisted of Ted Kornellison, Fred Smith and Clyde Smith. Musical programme was executed by Mrs. O. S. Bulkley, Mrs. C. H. Cram, Mrs. Ira Graham. The arrangements in general were in the hands of F. H. Robinson, J. P. Goytino, Dr. J. T. Arwine, John Demuth, H. F. Keeler.

The judges made the following awards:

Apples—Crow Bros., first; H. F. Keeler, second.

Vegetable display—Capt. W. H. Graves, first; T. Johnson, second.

Wheat—Fred Price, first; Herb Smith, second.

Canned fruit—Mrs. J. T. Arwine, first; Mrs. G. A. Lutz, second.

Jelly—Mrs. A. Dahl, first.

Quinces—Mrs. A. Dahl, first.

Peaches—H. F. Keeler, first; Mrs. Anna Everett, second.

Wines—J. Ritter, first; George Bonninger, second.

Almonds—J. R. Holland, first; Frank Frakes, second.

Pears—H. F. Keeler, first; William Doyle, second.

Onions—Harry Beckley, first.

Cotton—H, Stoughton, first; W. V. Frydenhall, second.

Kaffir corn—W. H. Graves, first; G. H. Fuller, second.

Field corn—M. J. Wilcox, first.

Oats—M. J. Reynolds, first

Wonderberries—L. B. Crocker, first.

Alfalfa—P. B. Lampman, first; T. A. Moorman, second.

Hogs—G. H. Miller, first.

Poultry—White Wyandottes, Naragansett turkeys and young pair Toulouse geese, Dr. J. T. Arwine, first.

White Leghorns—Mrs. G. A. Lutz, first.

Rhode Island Reds—Mrs. A. Keeler, first.

Bronze turkeys, Pekin ducks, Toulouse geese (old) and light Brahmas. W. V. Frydenhall, first.

Colts—Fred Gadde, first; G. A. Lutz, second.

Jersey cows—T. A. Moorman, first.

Jersey heifers—S. S. Lee, first; Jim Robinson, second.

The wind-up of the judges' duties was the awards on babies, which resulted in Mrs. G. A. Sear's securing first and Mrs. A. G. Bennett second.

So pronounced was the interest taken and so well was the effort patronized, that the people are already in line for a similar event next year, only that the Institute feature will be extended to cover four days instead of two, and the exhibits will be more than doubled in extent and variety.

THE NEW MEXICO RANGE CATERPILLAR.

A new range caterpillar which was reported as damaging the ranges in New Mexico has been investigated by the representative of the U. S. Department of Agriculture, and a report of those observations has just been issued as Bulletin 85 Part V, Bureau of Entomology.

The first intimation of the alarming increase of Hemileuca caterpillars in northeastern New Mexico reached the Department in August 1908, and before the end of October of that year the outbreak was under the careful study of an expert. Therefore, the report covers the adult period of this depredating insect in 1908, and the entire active life period of 1909.

The history of the range caterpillar, now designated as Hemileuca oliviae Cockrell, prior to this outbreak is very vague and probably, owing to the fact that they have not been able to distinguish between these caterpillars and those of other species, the information furnished by ranchmen and others is very unreliable. The species may have had its origin in the country east of and adjacent to the Rocky Mountains in northeastern New Mexico. The first authentic history of the genus Hemileuca in New Mexico begins about five or six years ago, and the section around Springer Lake, an irrigation reservoir a few miles from Springer, a station on the Santa Fe Railway, 50 miles south of the Colorado line, appears to have been the starting point of the present outbreak, and from there it has spread north, east, and south.

The area at present is not well defined, but it is known to extend from just north of Las Vegas, N. Mex., on the south, to Las Animas, Colo., on the north and from Cimarron and Kochler, N. Mex., on the west to points within the Texas "Panhandle" on the east—or over an area 200 miles from north to south by 150 miles from east to west—comprising about 30,000 square miles.

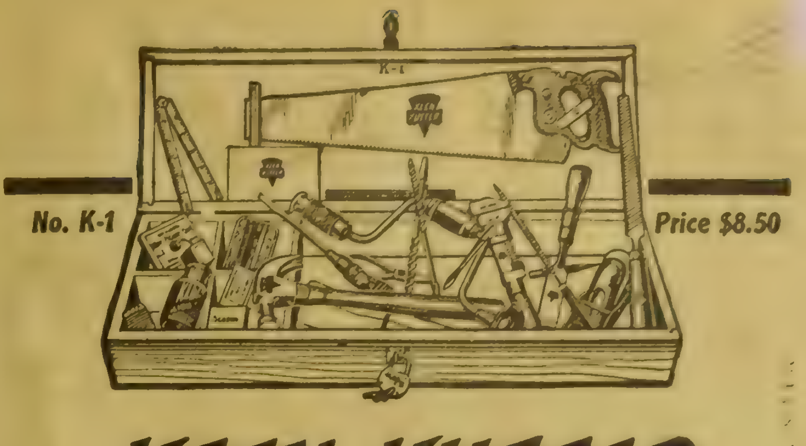
All of this area is not evenly infested, but the insect is more or less prevalent everywhere. Counts made at widely distant points of the caterpillars present on a measured square rod showed enormous numbers present on this range, in some cases as high as 20,000,000 to the square mile, justifying, as conservative, an estimate of 1,536,000,000 caterpillars depredating on the infested area, a number capable of tremendous possibilities for harm, especially when it is remembered that the full-grown larvae frequently measure 2½ inches in length with the diameter of a man's index finger, and are so numerous that one really has to choose his steps to avoid crushing the huge, spiny ugly caterpillars. And the sensation produced when it becomes necessary to walk miles through their myriads is both peculiar and lasting.

PARCELS POST.

Why should our government do more for a foreign country than it does for her own people, is one of the questions that is hard for the average citizen to solve. Yet the postoffice department is doing this and has been for years. Now another country has been added to the list.

This time it is a South American republic. The terms are similar to those already existing between this country and about twenty other countries. An eleven-pound parcel can be mailed to these far away countries at 12 cents per pound. Our domestic post provides for only a four-pound parcel and the rate is 16 cents per pound. Why not treat ourselves to some of the benefits granted the citizens of foreign countries?

The grange asks for the co-operation of all organized as well as individual effort to impress our law makers with the fact that the people demand equally as good service and at as reasonable rates for transporting through the mails as is accorded to foreign nations.—The Grange.



KEEN KUTTER
Tool Cabinets

A boxful of tools—good tools—just the kind you would select were you an expert carpenter or cabinet maker. That's what you get when you buy a Keen Kutter Tool Cabinet. In fact these are the only tool cabinets made containing a complete set of tools under one trade mark and guarantee, and it's a real guarantee—a fair and square guarantee—one that refunds your money if you are not fully satisfied.

Every tool has a place of its own and it's there for service. Whatever the tool—however hard the work—you won't be disappointed.

Keen Kutter Tool Cabinets are made in many different sizes, the prices varying with the number and kinds of tools selected. There's the $8.50 size containing enough tools for any ordinary job, several between this and $50.00 and one at $125.00, which includes work-bench, vises, etc.

"The Recollection of Quality Remains Long After the Price is Forgotten."—E. C. Simmons. Trade Mark Registered.

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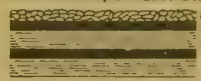

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Reference: Any Poultry Paper in the West

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When writing to advertisers mention the Cultivator

Queries and Replies

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Red Spider.

Please give me best method of fighting red spider.—R. R. B., Hanford.

The dry lime-sulphur mixture may be used. To be the most effective use the high-grade flowers of sulphur and hydrated lime. Thoroughly mix and apply with dust machine, or if water spray is preferred, use sulphur 30 pounds, stone lime 15 pounds and water 200 gallons.

Best Apple.

What is the best apple to plant for commercial purposes? How many years before they come into bearing, boxes per tree, and how long will apple trees proves profitable?—C. H. C., Hughson.

The best information regarding the most desirable fruits for any section is to be had in the neighborhood. Every community differs. For example, in Watsonville, the Newtown Pippin, Bellflower and White Winter Pearmain do exceptionally well, but even in that small valley different sections are given over to special varieties. In Orange and Los Angeles counties where apples are grown, they are generally the Winter Pearmain. Now as to which of these apples would do the best in Stanislaus county we cannot say. Possibly if winter apples were set, the White Winter Pearmain would be the best. The number of boxes per tree depends so much on the variety and location that it is impossible to give definite figures. They will usually bear at five or six years and increase of course for a great many years. The apple is a long lived tree and should produce profitable crops for a lifetime.

Walnuts.

Does Western Oregon compare with Southern California in producing nuts? What is the best variety of walnuts to plant? How far apart should they be set? How many years before they come into bearing? What is a fair estimate in pounds per tree, and how many years will they give paying crops?—C. H. C., Hughson.

Walnuts which will do well in one section often will not in another. The varieties which have proven great money makers in Southern California would not be the best to plant in the vicinity of Hughson. This is because of the earliness of the blooming season. Probably the Mayette, or Concord would be the best varieties for your section. In a soil where large trees are expected, planting 50 or 60 feet apart should be the rule. It might be advisable to interset, thus nearly doubling the number of trees per acre. These additional trees could be left standing for perhaps fifteen years, then removed, but we notice few orchardists have the nerve to take out big, fine. full-bearing trees at that age. The result is that they crowd and the entire orchard becomes unprofitable. Perhaps the better plan would be to interplant to peaches, alfalfa, corn, or annual crops.

Walnuts should yield sufficiently at the age of five or six years to pay cost of cultivation. Length of life depends upon soil and water conditions, also upon care received. One walnut grower in Southern California says that he plans to spend on his walnut grove at least $30 per acre per year in fertilizers, cultivation and irrigation. Few walnut growers are so liberal. Trees are now bearing their heaviest crops at forty years of age in some parts of California. Therefore it would be hard to tell how old a tree will bear profitable crops.

Fruit in Arizona.

What kind of trees should one plant in this part of Arizona? Altitude is 4000 feet, hard frosts in April and sun warm during the day time, soil heavy clay. Would especially like to know as to apples and grapes.—Subscriber, Douglas, Ariz.

It is impossible to state definitely what fruits will do well in a new section; it is a matter for experiment. Without question, peaches of nearly every variety will do well. With apples, it would be a matter of testing, but we believe both summer and winter apples would be profitable under such conditions. Practically all the American varieties of grapes are sure to do well. In the Europeans, we believe the Emperors, Cornichon, Tokay and Malaga will be best. Thompson Seedless and some others we think would not succeed so well with you.

Pecans.

At what age will pecans come into bearing, and will they do well in the interior valleys where the thermometer reaches one-hundred in the summer? We have some fog,—Subscriber, Nordhoff.

We do not think pecans would do under the conditions you name. However, they are being tried in this State and some maintain that they will make good. Nearly all the Southern states, and especially Texas, are planting heavily and the pecans are reported to be bearing exceptionally well there. Lands in these sections are probably cheaper than in California, therefore unless it is proved out that a variety will do exceptionally well here, we would advise caution in planting. Some trees near the coast in this state have grown to fine size and have a healthy appearance but fail to bear nuts in paying quantity.

Crown Root Borer.

Have peach trees and also apricots on peach roots, which have reached the age of five years. They are beginning to die. The roots seem to die first, showing exuding gum, later the leaves wither, and from the first tree observed to be affected the circle of dying trees widens in the orchard. What is the cause and cure?— E. R. T., Vacaville.

Not enough particulars are given to enable us to answer this question other than to give a mere surmise that the trees are attacked by the crown root borer. If that is the case, uncover the roots and probe with a wire to destroy the borer. This seems to be the only effective method of handling the pest.

Late Peaches.

What is the best late freestone in San Diego county in location about 2000 feet above sea level?—I. T. D., San Diego.

Probably the latest peach is Bilyeu's Late, or October peach, said to be an excellent shipper, with white flesh, rather coarse, but sweet. The Lovell, Muir and Elberta are all good, though by no means as late as the above named.

Red Spider on Beans.

I enclose leaves from beans infested with insect. What is it and how may it be controlled?—Subscriber, Nestor.

These leaves are infested with the serious pest, red spider, Dust the foliage thoroughly when moist with dew with mixture of lime-sulphur, formula for which is given in other query on red spider this week.

Developing Heifers.

Two heifers fresh only about a month are already drying off. Have fed on dry alfalfa with straw to run to. Have tendency to lay on fat.—W. A., Modesto.

Young stock are like children not fully effective as workers, this is one reason why many men cannot develop a heifer into a first-class cow, they fail in feeding, at a loss they are putting their money into a hole.

In this case, I should say these animals need something succulent to eat. Pumpkins, pie melons, beets or anything that is green. If these articles cannot be obtained, then try putting the hay they are to be fed into a moist condition. If the hay is taken the day before and made wet all through then closely packed and covered with sacks, by morning it should begin to heat a little. Feed it and see if the cows do not respond. Remember this is a change of food and only feed a little at first or the cows may get pains in their stomachs. —M. E. S.

Soft Brown Scale.

What is the insect on inclosed grapefruit twig and leaves?—V. B. B., Highland.

Soft brown scale which may be easily controlled by spray of kerosene emulsion, whale oil soap or even strong suds of common hard soap will be beneficial.

POULTRY SHOW DATES.

Stockton, Cal., Nov. 8-12, 1910. First Annual Exhibition of the San Joaquin County Poultry Association. Eugene P. Sabin, Secretary, Stockton.

Oakland, California, Nov. 22-27, 1910. Annual Exhibition of the Alameda County Poultry Association. E. K. Healey, Secretary, Alameda, Cal.

Seattle, Wash., Dec. 5-10, 1910. F. E. Barth, Secretary.

Portland, Oregon, Dec. 5-10, 1910. J. C. Murray, Secretary; M. W. Coates and Harry H. Collier, Judges.

Petaluma, Cal., Dec. 8-11, 1910. Fourth Annual Poultry Show of the Petaluma Poultry Association. H. R. Campbell, Secretary, Petaluma.

Santa Barbara, Cal., Dec. 18-19, 1910. The annual show of the Santa Barbara Poultry and Pet Stock Association. W. E. Lingard, Secretary, R. F. D. No. 2, Santa Barbara, Cal.

Ashcroft, B. C., Dec. 23-31, 1910. W. Maxwell, Secretary; H. H. Collier, Judge.

Tacoma, Wash, January 3-11, 1911. Frank L. White, Secretary, South Tacoma; Miller Purvis, Judge.

San Diego, Jan. 4-5-6-7, 1911. San Diego Pigeon and Pet Stock Club. A P. A. rules. W. C. McDougal, Secre-

Los Angeles, Cal., Jan. 5-11, 1911. Annual of The Poultry Breeders Association of Southern California at Chutes Park. A. H. Memler, Secretary, San Gabriel.

Colfax, Wash., Jan. 10-14, 1911. H. Rosenkranz, Secretary. H. H. Collier, Judge.

Walla Walla, Wash., Jan. 17-21, 1911 H. Dickinson, Secretary; H. H. Collier, Judge.

Jerome, Idaho, January 24-28, 1911. Wm. N. Hardwick, Secretary.

Over 20,000 acres of land in Sacramento county is planted to bearing fruit trees, according to data which County Horticultural Commissioner Bloomer has secured and is including in his annual report to the State Department.

MISCELLANEOUS.

Learn Wireless and R. R. Telegraphy! Shortage of fully 10,000 operators on account of 8-hour law and extensive "wireless" developments. We operate under direct supervision of Telegraph Officials and positively place all students, when qualified. Write for catalogue. Nat'l Telegraph Inst., Cincinnati, Philadelphia, Memphis, Davenport, Ia., Columbia, S. C., Portland, Ore.

For Sale—Registered Holstein Bulls; 1 to 2 years old. Some sired by Prince Juliana, brother of former world's record heifer, Juliana De Kol. Dam and granddam, A. R. O. cows. Three record-breakers in some of their pedigrees. M. E. Sherman, Minnewawa Vineyard, Fresno, Calif.

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Cures Strained Puffy Ankles, Lymphangitis, Poll Evil, Fistula, Sores, Wire Cuts, Bruises and Swellings, Lameness, and Allays Pain Quickly without Blistering, removing the hair, or laying the horse up. Pleasant to use. $2.00 per bottle at dealers or delivered. **Horse Book 5 D free.**

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Importer and breeder of RED POLLED CATTLE, SHROPSHIRE SHEEP, RAMBOUILLET SHEEP, HORNLESS AMERICAN MERINO SHEEP. Both sexes for sale. Take electric car at Petaluma or Santa Rosa for LIVE OAKS STATION. Address all mail to Petaluma, Sonoma Co., Cal.

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In this department we will insert your advertisement under a classified head for 1½ cents per word per issue. No ad accepted for less than 25 cents. Our classified columns are the clearing house for our many thousand readers.

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Farm Manager—Covering years of practical and scientific dairying, sanitary and certified milk, grade and registered stock, East and West, is open for similar position. Or, if preferable, would consider proposition to hire your farm for term of years, on share or cash rental, if carrying 50 to 150 deep milkers, tools, etc.; sterling references. Address Manager, Box 34, Parker, Arizona.

Wanted—Your work pays the expense to learn a trade that pays $5 a day, in a few months' time; electricity, automobiles, plumbing, bricklaying; actual contract jobs; 200 students last year. United Trade School Contracting Company, 647 Pacific Electric Bldg., Los Angeles, Cal.

Wanted—Man and wife to work on an orange orchard. Man to work in the orchard and wife to cook for three or four men. Each must be competent in their line of work and come recommended. Good wages and steady place for the right parties. Apply to R. D. Williams, Exeter, Tulare Co., Cal.

Wanted—Washington Navel and Valencia Orange, and Eureka Lemon trees. State quantity you can supply, also sizes and lowest price. Address P. W. Cheney, 312 Byrne Bldg., Cor. 3rd and Broadway, Los Angeles, Cal.

Help Wanted—We want several good solicitors to solicit for a high class suburban monthly publication. Good profitable employment to the right party. For particulars address Box H, Cultivator Office, Los Angeles.

Wanted—Position as manager or foreman on a stock or general ranch. Am graduate of Agricultural College and understand registered stock. Address, R. T. Lyons, Glendale, Cal.

300 Farms Wanted—Let experienced, reliable people sell or exchange yours. Parrish Barker, 207 Union Trust Bldg., Los Angeles.

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For Sale—Second-hand windmills, tanks, engines, farm machinery that will do same work as new at half price. 8 ft. Steel Aermotor, tower, tank, pump complete, $48; also many others. Small distillate tanks, 50 gallons up. Domestic and irrigating tanks, 500 gallon up to 50,000. 4-H.P., $75; 6-H.P. and 20-H.P. Fairbanks, 9, 10 and 25 H.P. engines, fine shape. Special bargain, two 12-H.P. complete pumping plants, Fairbanks and Lambert with deep well Ames double-acting pumps complete, pumping 20 inches water now, at $350; 2-H.P. steam boiler and engine; wood sawing outfit, mounted on iron trucks with 9-H.P. engine, complete for $225. Baler, header, gang, disc, road, riding, and walking plows; cultivator, feed rack, fruit crusher, bone grinder, pipe, Fresno and Slip scrapers. Most anything ranchers want second-hand. Demmitt Co., upstairs, 120 N. Main St., Los Angeles, Cal.

For Sale—35-H.P. Fairbanks-Morse gas engine in good order. Very anxious to sell, so will make low price. Machinery Exchange, Main and Bruno Streets, Los Angeles, Cal.

For Sale—11-H.P. gas engine, recently secured, thoroughly overhauled. Will make exceptionally low price and give guarantee for a year. Bailie & Brandt Co., 943-945 N. Main St., Los Angeles, Cal.

TREES.

For Sale—500,000 fruit trees, gums, cypress, roses, seedlings. One 9-lb. war horse Game rooster, a sacrifice at $4.50. The Cash Market, R. F. D. 1, Box 2, Sebastapol, Cal.

Fruit Trees—Get our advance prices. Choice 4-inch pot roses, 15c. Our tree specials won't last long. Get wise. Ballou's Nursery, Pasadena, Cal.

Marsh Seedless Grapefruit—600 large trees for sale. E. S. Thacher, Nordhoff, Cal.

For First-Class Valencia and Navel Orange trees and Eureka lemons, see A. G. Snow, Oxnard, Cal.

Fine Line of Navels—Valencias and Eureka lemons for delivery spring of 1911. Contract now and get the first choice. The King Citrus Nurseries, Whittier, Cal.

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Milch Goats—Young three-quarter Toggenburg, extra fine buck and several does, hornless beauties. For sale. B. A. R. Stocker, San Luis Obispo, Cal.

Registered Shorthorn Bulls and Poland China Hogs for sale. Best breeding. P. H. Murphy, Perkins, Cal.

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Wild Plant Improvement Gardens, Santa Ana, California. Newton B. Pierce, proprietor. Rare choice ornamentals and new fruits from all lands.

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Wanted—20 acres of raw land with water right, suitable for alfalfa, in coast counties. Small improved place would be considered. H. Turner, Greenfield, Cal.

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Milk Coolers, Bottles, Caps, brushes, Buhl milk cans, Sharples separators, Babcock testers, veterinary instruments, wood soled boots and shoes, and our celebrated "Prosperity" washing powder. Guy F. Kelsey, 108 E. 8th St., Los Angeles, Cal.

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Owens Valley Lands—The greatest opportunity for the California farmer today is awaiting him in the Owens River Valley. This remarkably fertile spot possesses more attractive features than any land in California. The only land in California that will produce with equal results the big red winter apples that have made Washington, Oregon and Colorado famous, and have brought to the owners untold wealth. California farmers should learn real conditions of apple culture and appreciate that these lands under development, are equal in value to our choicest orange lands. The conditions which surround Owens River Valley are ideal in every particular. Not only is the climate nearly perfect and the scenery all that one could desire, but the productiveness of the soil excels anything in California. Corn 13 feet high, with ears 18 inches long, running 70 bushels to the acre. Potatoes that run 500 bushels to the acre, equaling the famous Greeley, Colorado district, where such land is worth $500.00 an acre. So remarkable is the productiveness of the soil in the Owens River Valley that one should consider its value purely upon its ability to earn, rather than to compare it indifferently with acreage in any other section. There is just as much difference between the Owens River Valley land and the land that is ordinarily offered as there is between the value of Hill St. and Broadway property. The Owens Valley land is 4,000 feet above the sea, with just sufficient frost in winter to make a perfect red apple. Fogs, hail or gales are unknown. The supply of pure mountain water is unlimited and the completion of the new Southern Pacific railroad, which will be running in 30 days, makes the entire proposition ideal. You owe it to yourself to thoroughly investigate this property, for there will be, without a doubt, a greater increase in value in the Owens River Valley in the next few years than in any other point in California. In fact, we look for nothing short of a boom the coming year. If you own orange or walnut land that you can sell at a good price, you will certainly be making a good move to dispose of it and go into this new country. We can doubtless help you in selling your land. We have done it for others. Drop into this office and talk with our representative, who is an old Rogue River apple man of 20 years' experience, and who has studied Owens Valley conditions and can give you a very intelligent description of our property, or drop us a postal and permit us to send you our literature. James R. H. Wagner, H. S. Cook, 329 South Hill St., Los Angeles, Cal.

For Sale—40 acres of land planted to beans and corn. About 8 acres of grown Eucalyptus timber, 3 acres in family orchard, windmill, tank, barns, 13 chicken houses, brooder house, everything necessary to run four or five thousand hens. New wagon, 2 good horses, buggy, plows, cultivator, within 4 miles of Santa Maria oil fields. 5-room house, nicely shaded with pepper trees. A good opening for a young couple. Price $4,000. Apply to W. J. Webb, Owner, Santa Maria, Cal.

For Sale—A 20-acre farm for $20 cash and $20 a month; possession now; $90 to $125 per acre; your crops pay for the land. Rich, level land for alfalfa, oranges, almonds, grapes, cows, chickens; abundance of ditch water, for irrigation, for $1 an acre a year. Where else can you get this? In Oakdale Colony, near good town and railroad station, climate delightful. T. Wiesendanger, 207 S. Broadway, Los Angeles, Cal.

Fresno County—For sale, 320 acres; 160 alfalfa, 160 Muscat vines; fenced, cross-fenced, 1000 tons of alfalfa this year, 60 tons raisins, abundance cheap water, fine buildings, implements, 8-ton wagon scale; show profit 20 per cent, can make 30 per cent. Can subdivide. E. E. Bush, 805 Union Trust Bldg., Los Angeles.

For Sale—815 acres in San Luis Obispo County. A typical dairy ranch. Plenty of wood, water, irrigable land, buildings, fenced and cross fenced. Orchards, vineyards, oranges, lemons and walnuts do exceedingly well here. Forty acres of land suitable for these. Price $21 per acre. For further particulars apply to Mrs. F. A. Clink, Pozo, Cal.

20-Acre Ranch—In the orange belt north of Exeter. 10 planted to oranges, well that tested over 100 inches, with pumping plant installed. Electric lights, running water, and ideal location. ½ mile from railroad. For one desiring a home, they could not find things nicer or location better. Address Box 103, Visalia, Cal.

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For Sale Cheap—$300 buys a 160-acre relinquishment claim, fine rich level land, plenty of water at 150 feet. Close to a fine market. This is the best bargain you ever heard of. No exchanges. Wm. T. Mantz, Pattiway, Cal.

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For Sale—A bargain! One of the best 5-acre fruit and alfalfa ranches in Escondido Valley; good house, outbuildings, well, windmill, tank, fine shade; 1¼ miles from Escondido; $2650. For particulars address C. O. Husted, San Marcos, Cal.

For Sale—El Cajon Grant Land. In the heart of El Cajon Valley, 80 acres of choice vineyard, large house, cottage and barn; trays, boxes, etc. Close to proposed electric line. S. B. Hawley, 1548 D St., San Diego, Cal.

For Sale—A 13-acre ranch near San Jose. Prunes 9 acres, peaches 4 acres, bearing splendidly. Windmill, garden and good buildings. Climate unsurpassed. Lowest price $6,000. No trades. Write to J. Vandergon, 309 N. 5th St., San Jose, Cal.

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FARM LANDS FOR SALE.

For Sale—[illegible] to [illegible] floor. With [illegible] in a co-operative [illegible] water is now deli[illegible] in the midst of [illegible] settled Tulare cou[illegible] sive cultivation [illegible] well. 4 miles to ra[illegible] town. Neighbors next [illegible] considerably less if taken at once. F7764. John W. Thompson, 522 S. Main, Los Angeles, Cal.

For Sale—Are you looking for a Southern California alfalfa ranch? Investigate mine. It is near Riverside, in genuine alfalfa district. Fine pumping plant; part already in alfalfa; some land graded and entire tract of 240 acre[illegible] conveniences; in fact, t[illegible] property. W[illegible] ilar Southern California alfalfa proposition can be bought for. F7764. John W. Thompson [illegible]

332-Acre Hog Ranch—With a lake of 50 acres, stocked with fish and game. Thoroughly equipped and highly cultivated to alfalfa, vineyard and orchard. All modern improvements for country home. Expect to have 1,000 head of hogs on farm before long. Choice location, good markets. Investigate. $12,500 will handle, balance easily arranged. Parrish Barker, 207 Union Trust Bldg., Los Angeles, Cal.

For Sale—70-acre farm, mostly Sacramento valley silt loam, 1½ miles from Anderson, Shasta County, set to French prunes, Muir peaches and alfalfa; good 8-room frame house, large barn and all necessary outbuildings, including packing house; abundant supply of pure water and pumping plant. Price, $200 per acre. J. O. Blickfeldt, Anderson, Cal.

For Sale—Quite a variety of alfalfa and fruit ranches in several counties. Also some land in good, new settlement. Send for descriptive list. Address, W. S. Ritchie, Corona, Cal.

For $1,900, Five Acres—Three, deciduous orchard; two, alfalfa. Full water right. F. Neal, Hemet, Cal.

POULTRY.

White Orpingtons—Cook Strain. We offer for sale a limited number of trios and pens of utility and exhibition stock at bargain prices for the summer season. Our breeding pens are imported direct from Wm. Cook & Sons, Scotch Plains, N. J., and are sons and daughters of first and second prize winners, Madison Square Garden. Messrs. Cook & Sons say of them: "They are all from some of the finest birds in this country." Book orders now for next season's hatching. Eggs $5.00 per 15. $25.00 per 100. Day-old chicks 50c each. October delivery. Rancho La Solana, Box 143, Chula Vista, Cal.

How to Make Money—Mrs. A. Basley's New Poultry Book is just out. It is without exception the most wonderfully complete manual on the subject of successful poultry management ever written. The secret of how to raise every turkey hatched and the "Basley Formulas," now published for the first time, are worth many times the price of the book. The "Western Poultry Book" is a practical book by a practical woman. Price $1.00. Address Mrs. A. Basley, Box 77, Venice, Cal.

Hayes, R. B., Poultry Fancier and Rhode Island Red Specialist—[illegible] breeding pens of Reds, 20 pens miscellaneous varieties. See our birds, they tell their own story, or write for circular. Eggs for sale only. Yards in Arroyo, opposite Ostrich Farm. Box 35, Garvanza Sta., Los Angeles, Cal. Phone East 1631.

For Sale—Eggs for hatching, Black Minorcas, Barred Plymouth Rocks, and Rhode Island Reds, $1.00 per 15, $5.00 per 100; chicks, 12½c each. Also pullets and cockerels. L. W. Neilsen, R. R. 2, Box A 1, Petaluma, Cal.

LOVELL'S BLACK MINORCAS
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Greatest Egg Producers

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WIN EVERY TIME.

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Single Comb Brown Leghorn Eggs—$5.00 per hundred, $1.50 single setting. Mrs. E. Foran, Box 445, Visalia, Cal.

Poultry Wanted—We pay the highest market price for all the local poultry we can get, no matter how large the quantity; also fresh ranch eggs. We remit immediately. Allaway & Layton Co., 607 E. 3d St., Los Angeles, Cal.

For Sale—Thoroughbred Rose Comb Black Minorca Cockerels, Eleanore Minorca Farm strain. W. H. Fowle, Box 55, Route 1, Denair, Cal.

Day-Old Chicks—Barred Rocks, Rhode Island Reds, Black Minorcas, Brown and White Leghorns. Sussex Poultry Manor, Los Gatos, Cal.

Pacific Hatchery—Baby chicks, incubator eggs, and selected thoroughbred poultry, ranch raised. W. W. Clough, Ontario, Cal.

Two-year-old Turkey Hens For Sale at $3.00 each. Healthy stock. Chas. A. Bell, Chatsworth, Cal.

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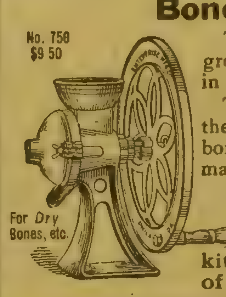
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50-Lb. Sk. Table Salt only...40c
50-Lb. Sk ½ Grd. Salt only...30c
1 Lb. Grd. Pure Pepper only..20c
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Three 1-Lb. Cans Armour's "Veribest" Pork and Beans, only 25c, one dozen 95c.
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Entire year—enter any time. Get rates. F 1850, Main 2305

Household Department

THE GOOD-NIGHT KISS.

O mothers, so weary, discouraged,
  Worn out with the cares of the day,
You often grow cross and impatient,
  Complain of the noise and the play;
For the day brings so many vexations,
  So many things go amiss;
But, mothers, whatever may vex you,
  Send the children to bed with a kiss!

The dear little feet wander often
  Perhaps from the pathway of right.
The dear little hands find new mischief
  To try you from morning till night;
But think of the desolate mothers
  Who'd give the world for your bliss,
And, as thanks for your infinite blessings,
  Send the children to bed with a kiss!

For some day their noise will not vex you,
  The silence will hurt you far more;
You will long for their childish voices,
  For a sweet, childish face at the door;
And to press a child's face to your bosom,
  You'd give all the world for just this,
For the comfort 'twill bring you in sorrow,
  Send the children to bed with a kiss!

—New Orleans Picayune.

HENNY PENNY.

Here is an old, old story that mothers and nurses have told to children for centuries:

Out in the morning early, while the dew was on the grass, came Henny Penny looking for her breakfast. And she went through the hole in the wall into the garden, where her mother had told her a hundred times she must not go.

As she picked here and picked there, she came among the pea vines and a pea pod opened and dropped a pea upon her tail. Then Henny Penny thought the sky was falling and she ran and ran until she came out through the hole in the garden wall.

There, in the hen yards, she met Cocky Locky and cried out, "O, Cocky Locky, the sky is falling and I must go and tell the king."

"How do you know?" asked Cocky Locky.

"I saw it with my eyes and I heard it with my ears and a piece of it fell on my tail."

"I will go with you," said Cocky Locky.

So they gaed and they gaed and whom should they meet by Ducky Daddles. And when Ducky Daddles saw them he cried out, "O, Henny Penny, Cocky Locky, where are you going?"

And Henny Penny said, "O, Ducky Daddles, the sky is falling and we must go and tell the king."

"But how do you know?" said Ducky Daddles.

"I saw it with my eyes and I heard it with my ears, and a piece of it fell on my tail."

"I will go with you," said Ducky Daddles.

So they gaed and they gaed, and whom should they meet but Goosie Poosie. And Goosie Poosie said, "Oh Henny Penny, Cocky Locky, Ducky Daddles, where are you going?"

And Henny Penny said, "O, Goosie Poosie, the sky is falling and we are going to tell the king."

"But how do you know?" asked Goosie Poosie.

"I saw it with my eyes and I heard it with my ears, and a piece of it fell on my tail."

"I will go with you," said Goosie Poosie.

So they gaed and they gaed, and whom should they meet but Turkey Lurkey. And Turkey Lurkey said, "O, Henny Penny, Cocky Locky, Ducky Daddles, Goosie Poosie, where are you going?"

And Henny Penny said, "O, Turkey Lurkey, the sky is falling and we must go and tell the king."

"But how do you know?" said Turkey Lurkey.

"I saw it with my eyes and heard it with my ears and a piece of it fell on my tail."

"I will go with you," said Turkey Lurkey.

So they gaed and they gaed, and whom should they meet but Fox Lox. And Fox Lox was out in the morning early looking for his breakfast.

Now when Fox Lox saw them coming he stood in the road and said, "O, Henny Penny, Cocky Locky, Ducky Daddles, Goosie Poosie, Turkey Lurkey, where are you going?"

And Henny Penny said, "O, Fox Lox, the sky is falling and we must go and tell the king."

"But how do you know?" said Fox Lox; and he looked east and he looked west and he looked up and he looked down, but all he could remember was that it was breakfast time.

And Henny Penny said, "I saw it with my eyes and I heard it with my ears and a piece of it fell on my tail."

Then Fox Lox said, "O, Henny Penny, Cocky Locky, Ducky Daddles, Goosie Poosie, Turkey Lurkey, shall I show you the way to the king's house?"

And Henny Penny said, "Cluck!" and Fox Lox led the way, and they gaed and they gaed, and at last they came to the house, where Mrs. Fox Lox and all the little Fox Loxes were waiting for their breakfast. And Fox Lox stood at the door of the house where all the Fox Loxes were waiting for their breakfast, and said with a bow, "O, Henny Penny, Cocky Locky, Ducky Daddles, Goosie Poosie, Turkey Lurkey, this is the king's house. Shall we go in and tell the king?"

So they gaed and they gaed in at the door of the house where Mrs. Fox Lox and all the little Fox Loxes were waiting for their breakfast. And I suppose the sky must have kept on falling, for neither Henny Penny, Cocky Locky, Ducky Daddles, Goosie Poosie, nor Turkey Lurkey ever came out again.—Kansas Farmer.

SOME GOOD RECIPES.

A number of the ladies of Escondido are furnishing The Times-Advocate of that city a number of original recipes and from them we clip:

Chili Sauce.

Eight quarts of tomatoes, chopped, (not too ripe), four quarts of vinegar, four cups of sugar, one cup salt, six very large green peppers, (not the hot ones) and two large onions, peppers and onions chopped, two tablespoons celery seed and five of white mustard; one tablespoon each of cloves and cinnamon, cayenne pepper to taste. Cook till the desired thickness and bottle while hot.—Mrs. Frank Stiles.

Orange Pudding.

One cup of bread crumbs moistened with milk, one-half cup of sugar, juice of one orange, and grated rind of one-half orange, yolks of two eggs, whites of four. Stir in the last thing, the sugar added to the beaten whites. Put the pudding pan inside of a pan of water and bake. Sauce for same—Butter the size of a walnut, and one cup of sugar creamed, add the grated rind of one-half orange, one-half cup of milk, yolks of two eggs and cook all in hot water until thick.—Mrs. W. L. Ramey.

Boiled Salad Dressing.

Nice to serve on sliced tomatoes, lettuce, artichokes, nut salad, etc.; will keep a long time if in cool place. Beat in a bowl three tablespoons olive oil, salt spoon mustard, pinch of salt, and one tablespoon sugar, add one tablespoon flour and two beaten eggs; mix all well together, add two tablespoons vinegar, three-fourths cup of cream or sweet milk, and put into double boiler, cook until like custard. Stir all the while it is cooking, so it does not curdle; when cool put in a jar and keep in a cool place. —Mrs. J. H. H.

Cucumber Salad.

Peel and chop green cucumbers, select those about the size used for slicing for the table. To one quart of cucumbers add one-half cup of onion chopped fine. To each quart of cucumber and onions add one-fourth cup of salt. Mix and let it stand over night. In the morning drain through a thin cloth or sieve till quite dry. Then add white mustard seed, celery seed and black pepper to taste. Cover with good vinegar. Keeps best in glass jars. Put a piece of broken crockery on top to be sure it remains covered with vinegar. —Mrs. Frank Stiles.

Spanish Stew.

Take a round steak, cut in small pieces, fry brown then put in a little water; let simmer till tender, cut one large onion in pieces and fry brown, one chili pepper, one can of tomatoes, cook till thickens slightly, salt and pepper to taste, pour over meat that you have simmering.—Mrs. C. A. Richards, Gridley.

WASHING KNITTED GOODS.

Knitted and crocheted articles will come through the cleaning process looking almost as well as new if the cleaning is carefully done. Woolen shawls are more easily washed than any other article because they can be kept in perfect shape by basting to a piece of thin muslin before washing. Lay the shawl on a piece of muslin a little larger than the shawl, then baste in place with long stitches and strong thread and cover with another piece of muslin and baste this enough to hold in place, then it is ready for washing. If the articles are not very soiled, they can be freshened considerably by rubbing them through hot corn meal, using it as if it were water, and the best way to clean them is to put them in a thin sack and pour a cupful of the meal over them, then rub the sack between the hands, and when they are clean, shake and brush until all the meal is out. When actual washing is necessary, make a strong suds by stirring enough pearline in warm, soft water to make a nice lather, and the two suds and rinsing water must be the same temperature to prevent shrinking, and as warm as can be borne comfortably by the hands. Put in the article to be washed and clean by pressing and squeezing between the hands, then put through a light suds and rinse through two or three waters with a little ammonia in each. If a shawl has been basted to a cloth before washing, it can be hung over the line until dry, but baby caps and sacks or any such articles should be put in a cheesecloth bag and hung in some breezy place until dry. Shake the cheesecloth bag often while drying the article. This is an excellent method of washing any woolen article and of any color, but in no case should they be rubbed hard or twisted in wringing, and while delicate colored articles should be washed, rinsed and dried as quickly as possible, the all white ones are improved by soaking in the suds, and they will come out looking almost as nice as new if the cleaning and drying are carefully done.—M. H.

WHAT WE NEED.

"Doctor," said one of those self-centred ladies who are always extracting opinions gratis from the medical profession, "what do you consider the best food as a constancy?"

"Hope, madam," returned the Doctor, promptly, "at all times and in all places. Not a senseless optimism, but a self-respecting Hope. Heaven and Nature intended it to be the chief pabulum of the race." The table dared not smile, and the doctor, having secured a few minutes' immunity, declined "wholesome" prefaces, and fell upon a robust breakfast of bacon and eggs, waffles, and hot rolls. The lady regarded him wistfully, for the doctor ate with appetizing gusto. A stomach long trained on other people's theories concerning edibles was not to be trifled with, so she was fain to satisfy herself upon a tasteless cereal, and then nibbled a little dry toast and sipped a woful substitute for coffee. But the doctor is nothing if not humane, so between his waffles he looked across at her pleasantly and began: "I said that because what a doctor actually does or gives is infinitely less in its effect than what he suggests. This is a truth as old as Hippocrates and Galen, though perhaps only in this age are we beginning definitely and intelligently to utilize it. Happiness is the substance and aim of life and living, and hope is nine-tenths, say, of happiness; its greatest factor; therefore beware of unconsciously dispensing with hope."—Harper's Weekly.

ONWARD TO THE GOAL.

Little sweating,
Never fretting,
Steady right along;
Little pleasure,
Double measure
When you come to song.

Onward ever,
With endeavor,
Work with heart and soul,
You'll be thriving
While you're striving
And will reach the goal.
—Rural World.

HOUSEHOLD HINTS.

A valued subscriber at San Luis Obispo writes: Onions baked in their jackets are excellent and readily digested; they will leave no after-taste nor smell. Onions steamed are equally innocent. Most vegetables that are good boiled are better steamed.

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Tells you when, where and how to trap. Tells you of Animal Baits that are as important to a trapper as traps. Reveals trapping secrets and gives methods that will increase the catch of any old trapper and quickly make successful trappers of the inexperienced.

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outlast average school shoes two to one and cost no more. They are good looking shoes, built to fit and comfortable to wear.

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WESTERN BRANCH: Washington Shoe Mfg. Co.—Seattle, Wash.

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CENTURY GUARANTEED READY ROOFING Is better than any other kind usually retailed at $3 to $3.50. It will wear longer and is cheaper than shingles. It is perfectly airtight and practically fireproof. Can be applied by any one of ordinary ability. It is full 36 inches wide and fully guaranteed.

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Century Ready Felt Roofing is made from selected long fiber wool felt, thoroughly saturated with waterproof composition, making a solid, flexible fabric, absolutely waterproof. It will outwear tin, tar, gravel, or any other roofing, and costs less to buy and put on.

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No.	Thickness	36-Inch Wide Covering	Square Feet in Roll	Price Per Roll
9B100	½-ply	100 square feet	108	$1.10
9B102	1-ply	100 square feet	108	1.35
9B104	2-ply	100 square feet	108	1.65
9B106	3-ply	100 square feet	108	2.25
9B108	4-ply	100 square feet	108	2.75

Above prices include headed galvanized nails, cement, etc.

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Manufacturers of *The Best Tents* on the market. Our Fumigating Tents hold the Gas and our Irrigating Hose hold the Water. Write for Catalogue No. 22.

San Francisco and Los Angeles Produce Markets

Los Angeles Markets

LOS ANGELES, Oct. 5, 1910.

Butter.

Butter advanced one cent per pound yesterday on extras and the present market conditions are very firm. Firsts also take an equal advance.

Price to trade 2½c in advance of the following Produce Exchange Quotations:

Extras	.33½
Firsts	.32
Cooking	.25

Cheese.

Local	.18
Northern fresh	.17@18
Archer, large	.18
Oregon Daisy	.18½
Imported Swiss	.30
Domestic Swiss	.22@24

Eggs and Poultry.

Monday's advance in eggs places them two cents above last week's quotations. Receipts not heavy enough to fill market's requirements.

Paying price f. o. b. L. A. is:

Local ranch candled	.45
Case count buying price	.41
Seconds	.27
Eastern fresh	.35
Eastern Storage	.32

Dealers pay for live poultry f. o. b. L. A.:

Hens, per lb.	.16@18
Roosters	.10
Spring 1½ to 2 lb.	.17
Turkeys	.24
Ducks	.16
Geese	.11
Squabs, per doz.	1.50

Live Stock.

The following quotations are f. o. b. Los Angeles, on all stock:

Hogs, 175 to 200 lbs.	9.60
Prime Steers	.5
Heifers	.4@4½
Calves, per lb.	.6½
Sheep ewes, per head, shorn	4.00@4.50
Lambs, per head	3.50
Wethers, shorn	4.00@4.50

Potatoes.

Wholesale prices are:

Local Burbanks, ctl	1.25
Highlands	1.40@1.50
Salinas	1.70
Sweets, Yellow, per ctl	1.25@1.75

Onions.

Wholesale quotations:

Yellow Danvers	1.75
Australian Browns	1.75
Garlic	.7

Vegetables.

Wholesale quotations:

Asparagus	.15
Artichokes, northern, doz	1.00
Beets, sack	.90
Beans, green	.4½
Beans, Limas	.4½
Brussels Sprouts	.12½
Bell Peppers, lb	.4@5
Green Chilis	.4@5
Chili's, Dried	.25
Cucumbers, per lug	.40
Cabbage, per sack	.85@1.00
Celery, crate	2.50
Cauliflower, per crate	1.75
Carrots, per sack	.90
Egg Plant, per lb	.4
Green Corn, box	.60@65
Green Onions, per doz. bunches	.20
Lettuce, choice, per crate	1.25
Leeks, per doz.	.40
Okra, lb.	.6
Peas, per lb	.6½
Parsley, per doz. bunches	.25
Parsnips, doz. bunches	.20@25
Radishes, per dozen bunches	.10@15
Rhubarb, crimson winter	1.00
Rhubarb, No. strawberry	1.50
Peppermint, doz. bunches	.30@35
Spinach, per dozen	.20
Hubbard Squash, lb	1½@2
Summer Squash	.40
Turnips, sack	1.00
Water Cress, doz. bunches	.25@35
Tomatoes, lug	.40@75

Citrus Fruits.

Valencias	4.00@4.50
Grapefruit	2.50@3.75
Lemons	4.00@5.00

Fresh Fruits.

Wholesale prices on the market are:

Alligator Pears	4.00
Apples, Bellflowers	.90@1.10
Spitzenbergs	1.75
Jonathans, Utah	2.50
Gravensteins	1.00@1.60
Greenings	1.00@1.25
Pearmains	1.00@1.25
Fall Pippins	1.10
Pineapples	.6@7
Casabas, doz	1.50
Cantaloupes, crate	2.50
Figs, box	.75@100
Grapes, lug	.85@1.35
Grapes, Tokays	1.25@1.50
Pears, box	1.40
Bartletts	2.25
Strawberries	.8
Blackberries	.10
Peaches, box	1.50
Plums, crate	1.50
Quinces, lb	1@2
Watermelons, lb	1½@2

Dried Fruits.

Wholesale prices are:

Apricots	.12@14
Evap. apples, fy., per lb	.8½
Peaches	.7@8½
Nectarines	.7½@9
Prunes	.6½@11
Plums	.10

Beans Dried.

Wholesale quotations:

Limas	5.00
Black eyes	5.00
Pink, No. 1	6.50
Lady Washington	4.50
Small white	4.50
Garvanzas	5.00
Lentils	8.00

Nuts.

Wholesale quotations are:

No. 1 soft shell walnuts	.15
No. 1 H. S.	.14
No. 2, all kinds	.11

Grafted or budded an advance of 2½c.

Brazil nuts	.14
Filberts	.14
Almonds, IXL, per lb	.17@17½
Pecans, polished	.18
Peanuts, Eastern	.7@7½

Honey.

Wholesale quotations:

Extracted water white	.9
Extracted light amber	.8
Comb W. W.	.20
Light amber	.15
Beeswax	.30

Hay.

Buying prices f. o. b. cars L. A. are:

Barley hay	8.50@10.50
Alfalfa	9.00@10.00
Wheat hay	10.00@11.00
Tame oat	10.00@12.00

Grain.

Wholesale selling price f. o. b. Los Angeles:

Wheat, new, per ctl.	1.85@1.90
Corn	1.75
Popcorn	3.50
Kaffir corn	1.75
Egyptian corn	1.85
White oats	1.85
Seed Rye	2.00
Seed Barley	1.30

Feed Stuff

Wholesale selling price f. o. b., Los Angeles:

Cracked Corn	1.80
Cracked Wheat	2.00
Shorts	1.80
Bran	1.55
Oil cake meal	2.50
Feed Meal	1.85
Rolled Barley	1.15

San Francisco Markets

SAN FRANCISCO, Oct. 4, 1910.

Butter.

An advance of a cent on butter quotations was made on Saturday and one cent advance on Monday and is meeting with stiff demand.

The official quotations of the San Francisco Wholesale Dairy Produce Exchange for today are as follows:

California extras, per lb	.34½
California firsts	.31
California seconds	.29
Storage	.30½

Cheese.

California flats, new	.12½@16
Cal. Young Amer. fy. new	.15½@16
Oregon, Fancy	.16½

Eggs and Poultry.

Eggs show an advance over last week's quotations of one cent, though this week does not open with as high quotations as were carried during the last few days of last week. Market not strong in tone.

Official quotations of the S. F. Wholesale Dairy and Produce Ex. are:

Fresh ranch extras	.45
Firsts	.42
Seconds	.30
Storage	.30
Hens, per dozen	5.00@10.00
Roosters, per doz.	5.00@8.50
Fryers, per doz.	5.00@6.00
Ducks	6.00@10.00
Broilers	3.00@4.00
Spring Turkeys	.26@28
Geese	2.00@3.00
Goslings, pr	2.00@3.00
Pigeons	1.50@2.25
Squabs	2.50@3.00

Live Stock.

San Francisco prices gross weight:

Steers	.3¾@5¼
Cows and heifers	.2¾@4¼
Hogs	.6@9¼
Calves, per lb	.4½@6
Milk Lambs, unshorn	.6@6¼
Wethers No. 1	.4½@4¾
Ewes No. 1	.4@4¼

Potatoes.

Wholesale market quotations:

River White, new box	.70@90
Salinas Burbanks	1.45@1.60
Sweets, ctl.	2.00@2.10

Vegetables.

Wholesale quotations:

Artichokes	.25@40
Beans, string, per lb	.3@4
Beans, Lima, lb	.2@3
Cucumbers, box	.40@75
Celery, per crate	.90@1.50
Chili Peppers, per box	.40@60
Bell Peppers	.6@7
Green Corn, sk	1.75@2.25
Egg Plant, per box	.30@40
Lettuce, per crate	4.50@5.00
Okra, box	.40@50
Peas, per lb.	.4@5
Rhubarb, box	.50@75
Summer Squash, box 25 lbs.	.50@75
Tomatoes	.15@50
Garlic	.2½@3

Onions.

Onions, sk	1.05@1.15

Citrus Fruits.

Valencias	2.50@4.00
Grapefruit	1.50@3.50
Lemons	2.50@5.50
Limes	6.50@7.00

Fresh Fruits.

Apples, box	.50@85
Apples, Gravensteins	1.25
Apples, Bellflowers	.90@1.00
Bananas, Hawaiian	.75@1.25
Cantaloupes, crate	1.25@1.75
Cranberries, Coos Bay, bx	$3.00@4.00
Muskmelons	2.00@2.50
Nutmegs	.50@85
Figs, box single	.50@1.35
Grapes, seedless	.50@65
Grapes, Muscat	.40@65
Grapes, Tokays	.35@50
Grapes, wine, ton	8.00@15.00
Huckleberries, lb	.6@8
Pears, Winters	.50@85
Bartletts, wrapped	1.75@2.25
Peaches, lugs	.75@1.00
Persimmons, box	1.00@1.25
Nectarines, red	.40@90
Quinces, box	.50@85
Pomegranates, box	.75@1.25
Plums, crate	.90@1.15
Blackberries, chst	6.00@7.00
Raspberries, chst	4.00@6.00
Strawberries, chst	4.00@5.00
Pineapples, doz.	2.50@3.00
Watermelons, per doz.	1.00@2.00

Dried Fruits.

1910 crop, f. o. b., carload lots, per lb: Apples, 7@8¼c; Apricots, 10¾@13¼c; do. Moorparks, 13½@14c; Peaches, 5½@7¼c, with a premium of ⅛@¼c on Muirs; Prunes, Santa Claras, 5½@6¼c, with ½@¾c premium on 40s; outsides 5⅜@6⅛c; Figs, 4¾@6½c for White and 4¼@4½c for Black; Pears, 9¾@13c.

RAISINS—1910 crop: London Layers, in 20-lb. bxs: 6-crown clusters, $2.25@2.50; do, 5-crown, $1.75@2.00; do 4-crown, $1.25@1.40; 3-crown layers, $1.05@1.15; do, 2-crown, 95c@$1.00. Seeded, per pkg.—Fancy, No. 16, 6@6¼c; Choice, No. 16, 5½@5¾c. Loose Muscatels in 50-lb. bxs—Standard, 4-crown, 5½@5¾; do, 3 crown, 4¾@5c; do, 2-crown, 4¼@4½c. Dried Grapes, 3@3¼c. Seedless—Muscatels, 3¾@4c; Sultanas, 4¾@5c; Thompsons, 5¼@5½c.

Nuts.

Almonds, '10 N. P. U.	.14½
Almonds, '10 Nonp	.16½
Almonds, '10 I X L	.15½
Almonds, Peerless	.13½
Pecans	.14@15
Chestnuts	.14@15

Beans Dried.

Limas	4.15
Pink	5.50
Black eyes	5.35@5.75
Small white	3.75
Large white	3.80
Kidneys	6.75@7.00
Garvanzas	3.25
Bayo	5.15
Horse beans	2.00
Red Mexicans	6.00
Cranberry	4.50@4.75

Hops

Hops, 1910 crop	.12@16
Hops, 1909 crop	.10@15

Honey.

W. W. Comb '10	.15
Dark Comb	.12½
Extracted W. W.	.8
Extracted, dark	.6½
Beeswax, per lb.	.24@30

Hay.

Scott, Magner & Miller say:

Arrivals of hay on the market here for the past week have been 5000 tons, being exactly the quantiy we had received the preceding week. While there has not been any change in prices to speak of, there is a little firmer tone to the market on account of the fact that the hay is being pretty generally cleared up from the fields and the knowledge that hay will have to be taken from the warehouses shortly to supply the regular current demand.

The medium and poorer qualities of hay are just as dull and slow to move as they have been heretofore. It is in the higher types of hay that we find the market a little firmer, and on fancy hay, of which variety there has been very little offering, there is quite a little inquiry.

There is a great deal of alfalfa hay coming in, but the market on this article remains steady at our quotations, and the heavy arrivals are being readily taken care of for shipping purposes to the North, and for general trade, which is active on this article.

Fancy wheat	12.50@13.50
No. 1 wheat or wh and o	10.50@11.50
No. 2 wheat or wh and o	9.00@10.00
Choice tame oat	10.50@11.50
Other tame oat	8.00@9.50
Wild oat	8.00@9.00
Stock hay	5.00@6.00
Alfalfa	9.00@12.00
Straw	.40@60

Grain.

Wheat No. 1	1.50@1.55
Barley, good to choice	.95@96¼
Barley, fancy	.96½@98¾
Barley, poor to fair	.92½@93¾
Oats, white	1.50@1.60
Rye, new crop	1.65@1.70
Corn, large yellow	1.55@1.60
Alfalfa seed	.14@15
Mustard brown	.4½
Millet	.3¾
Flaxseed	.5@5½
Broom corn seed, per ton	23.50

Feed Stuff.

Bran, per ton	27.00@30.00
Feed cornmeal, per ton	36.00@37.00
Cracked corn	36.00@37.00
Ground barley, per ton	22.50@25.00
Rolled oats, per ton	29.00@31.00
Middlings	32.00@35.00
Oil cake, per ton	40.00@41.50
Cocoanut cake per ton	25.00
Mixed feed, per ton	24.00@27.00
Shorts	29.00@32.00

Deciduous Market

SACRAMENTO, Oct. 1st, 1910.

The following circular of the California Fruit Distributors gives number of cars of deciduous fruit shipped from all points in California for the week (7 days) ending Friday morning September 30th, 1910.

Peaches.

Twenty-two cars. The few peaches still going forward are mostly destined to the auction markets. There may be a few more cars next week, but not many.

Pears.

Twenty-five cars. The pear movement is rapidly drawing to a close and a few days more will see the end of the movement.

Grapes.

Six hundred and eleven cars. The grape movement has shown a very considerable gain over last week caused by uncertainty in regard to the weather which has stimulated the grower to extra exertions in moving out his crop as rapidly as possible. This movement of last week will undoubtedly be the heaviest of the season. There is every reason to believe that shipments will decrease from this time, although we expect to have plenty of Tokays to offer for the next two or possibly three weeks. Some Cornichons are moving and there are still a few Malagas available. Very few Emperors will be moved until Tokays are finished, or nearly so.

Weather conditions have continued favorable although at this season of the year showers may be expected at any time.

Citrus Market

LOS ANGELES, Oct. 5, 1910.

Practically all the green Valencias have been disposed of and most of the stock now going forward is of excellent quality. Prices are even better than they have been for some weeks and there is promise that the 500 cars yet to go will hold for the best of returns.

The new crop of Navels will be considerably earlier than for several years, which is a fortunate feature considering the large production. Tulare county may begin shipping as early as the 20th of this month and quite surely before the 25th. Southern California shipments will probably not start until the middle of the following month, but in any case a large supply of holiday fruit will be sent. The fruit now promises to be of high quality.

Lemons continue to command the best of attention and prices will remain firm for six weeks or two months, if not longer.

Shipments.

Shipments of citrus fruit to date since November 1, 1909: 29,525 cars, of which 24,917 were oranges and 4,608 lemons. To same date last season: 37,301 cars, of which 31,265 were oranges and 6,036 lemons.

NEW YORK, Monday, Oct. 3.—The New York citrus market at this season of the year, as is only natural, remains comparatively quiet with practically no fluctuations on established brands of high grade fruit. When the fruit is offered in limited quantities the ultimate consumers are almost solely those desirous of obtaining the highest quality and willing to pay it. Lower grades of poor color and eating qualities, which have been diverted all over the country are arriving on a market already surfeited with a liberal supply of deciduous fruits possessing excellent eating qualities and consequently encounter a dull market with prices possessing a distinctive fluctuation which varies according to the degree of the poorness of the fruit. This condition will undoubtedly continue with but little variation throughout the present season. Little changes will take place in the Valencias until the Florida and Porto Rican season, which is now rapidly approaching, becomes a factor. Then orange consumption will become more general, and outlets, which at present remain closed on account of the high prices and free supply of deciduous, will be opened.

Nine cars of oranges, two cars of lemons and one car of grapefruit were sold. The market was very strong on good quality oranges and lemons. The weather was clear and fair.

VALENCIAS—	Avge.
Blue Banner, Pioneer Ft. Co.	$2.80
Pride of West, Pioneer Ft. Co.	2.20
Titus Ranch, fy., San Marino G.P.A.	3.95
El Toreador, sd., San Marino G.P.A.	2.90
Sceptre, S. S. Exchange	6.25
Planet, S. S. Exchange	4.75
Pointer, A. C. G. Exchange	4.20
Hunter, A. C. G. Exchange	2.25
Golden Orange, Riverside Exchange	3.35
Pointer, A. C. G. Exchange	2.85
Hunter, A. C. G. Exchange	2.00
Mayflower, fy., Stewart Ft. Co.	5.60
Pilgrim, Stewart Ft. Co.	4.55
Old Mission fy. Chapman	7.25
Old Mission, ch., Chapman	6.60
Golden Eagle, sr., Chapman	4.85
Lady Rowena	3.05
Aurora, fy., Or. E. Peycke Co.	4.75
Luna, E. Peycke Co.	4.05

Lemons—Selected, $6.35; Crackshot, $4.80; Del Oro, $3.40; Senorita, $3.00. Grapefruit, halves—Champion, seedlings, $2.10; seedless, $2.00. Boxes—Seedling, fancy, $2.10; choice, $1.80; Climax, seedless ,$1.55.

CHICAGO, Monday, Oct. 3.—Lemons—There is a firm market. Demand is good for this time of the year and the supply is light. Boxes—California, choice, $4.75@5.00; common, $4.00@4.50.

Orange trade is good. Offerings are light and there is a firm market. Boxes—Late Valencia, extra choice, $4:25@4.50; choice, $3.70@4.00. Grapefruit—Florida, crates, $4.50@5.00.

BOSTON, Monday, Oct. 3.—Three cars sold. Clear and cool. Market doing better.

VALENCIAS—	Avge.
Bear, O. K. Exchange.	$3.05
Coyote, O. K. Exchange	1.90
Hunter, A. C. G. Exchange	2.90
Quail, A. C. G. Exchange	2.60
Pointer, A. C. G. Exchange	4.10

Lemons—Bear, O K. Exchange, $5.50.

PITTSBURG, Monday, Oct. 3.—One car sold. Firm on good fruit. Valencias—Blue Banner, $3.20; Pride of West, Pioneer Ft. Co., $2.55.

ST. LOUIS, Monday, Oct. 3.—Cloudy. Market weak on small size oranges, firm on good lemons One car Valencias and one car lemons sold. Valencias—G. Washington, S. S., Santa Ana, $4.00; Martha Washington, $3.20; Golden Kist, $2.25. Lemons—Quaker Girl, S. T. Whittier, $4.75; Greenleaf, $4.30.

PHILADELPHIA, Monday, Oct. 3.—Three cars Valencias sold.

VALENCIAS—	Avge.
Pointer, A. C. G. Exchange	$4.20
Tustin Gem, Tustin P. Assn.	4.95
Honest Pack, Tustin P. Co.	3.25
Pride of West, Pioneer Ft. Co.	3.25
Beauties	2.00
Hunter, A. C. G. Exchange	2.95
Old Oak, Tustin P. Co.	3.55
Blue Banner, Pioneer Ft. Co.	3.20
Evergreen	3.00
Stock Label	1.55

CINCINNATI, Monday, Oct. 3.—Warm. Very strong on Valencias and lemons. One car Valencias and one car Florida grapefruit sold. Valencias—Pet, S. A. Exchange, $3.20; El Capitan, $1.70. Florida grapefruit, $3.20.

NEW YORK, Tuesday, Oct. 4.—With but two cars of Valencias offered today it is difficult to quote the market with any degree of accuracy. Suffice to say prices and conditions remained practically unchanged. A small quantity of Porto Rican grapefruit and oranges was placed on sale and was absorbed readily at good prices. Fancy grapefruit of excellent quality sold at $3@6, with choice, $2.50@5¾; ordinary stock, $1¾@2.50. A limited quantity of Porto Rico oranges found a ready sale at $2.05@3.05; fancy stock, $3.05@3.75, averaging $3.54. Three cars of Florida grapefruit were also put through the auction at prices which made it apparent that grapefruit of good quality is wanted badly. Fruits brought $3¾@6. The entire offering of Florida grapefruit was of good color, weight and flavor.

Two cars were sold. The weather was clear and unchanged; warm.

VALENCIAS—	Avge.
Nonpareil Covina Exchange	$4.55
Red C, Covina Exchange	2.85
Cougar, Covina Exchange	3.40

BOSTON, Tuesday, Oct. 4.—One car sold. Weather favorable. Market very strong.

Valencias—Nonpareil, Covina Ex-Covina, $4.50.

CHICAGO, Tuesday, Oct. 4.—Lemons are selling very well. There is quoted a steady to firm market. Boxes—California choice, $4.75@5.00; common, $4@4.50.

Oranges—In rather small supply. Boxes, late Valencias, extra choice, $4.25@4.50; choice, $3.75@4.00. Grapefruit, Florida, crates, $.50@5.00.

EDUCATIONAL BUTTER SCORING CONTEST.

The highest score in the second year, scored September 26, 1910, at the University Farm, Davis, California was 95½, secured by Golden Creamery, Etna Mills. While the number of entries submitted at this time was somewhat discouraging, the quality exhibited was very gratifying. At no individual contest in the past two years have we met as high average quality as at this time, though the best score was not as high as has been attained on several other occasions. This is due in part to the fact that those who have given their support to the contest from the first are now reaping its benefits in the form of good scores.

The following report shows but one score less than 90, and an average for all of 93:

Golden Creamery, Etna Mills	95½
Castroville Cream., Castroville	94½
Suisun Creamery, Suisun	94½
Bodega Creamery, Bodega	94
Ceres Creamery, Ceres	94
Santa Ysabel Creamery, Paso Robles	93¾
Pioneer Creamery, Ferndale	93½
Salinas Creamery, Salinas	93½
Fresno Creamery, Fresno	93
University Farm Creamery, (Not Competing)	93
California Polly. Shcool. (Not competing)	91½
Standish Creamery, Standish	91¼
-------- --------- -------------	87½
Average	93.03

Interest centers now in the outcome of the current year's contest. As will be recalled, the following conditions were imposed relative to the awarding of prizes and certificates of merit, as announced at the beginning of the year. "There will be one class—Creamery Butter—and three prize cups for those having the three highest averages, respectively, of the six separate scorings during the year." "A certificate of merit will be awarded to each contestant whose six scorings average 92." "Those sending only five entries, with an average score of 93, will receive a certificate of merit." "A suitable prize will be awarded to the individual sending either five or six consecutive entries showing the most marked improvement in methods and quality." "Contestants are limited to one prize."

The sixth and final entry for the current year will be called for toward the end of November.—Herbert A. Hopper.

Mother (looking over her boy's shoulder): "Your spelling is perfectly terrible."

Little Son—"This isn't a spellin' lesson. It's a composition."—Good News.

AUTO TALK.

Every county in the state is falling into line on the good roads proposition—making way for the automobile so the automobile can make money for you. To some people the auto means only pleasure and convenience; to the rancher it is a business proposition. It saves time; it saves labor; therefore makes money. Some of us are willing to work hard. More of us don't mind wasting time. But one and all we would like to have more money, and that is just where the auto can help the enterprising man. Neither does it take a mint of money to buy and run one nowadays. The time is past when it was extravagant to purchase a car and ruinous to keep it. Cars are made to suit all requirements. If what one wants is a high grade, durable all around satisfactory machine, it is to be had for what he would pay for a fair team of horses. All one needs to do is to open his eyes to the offerings of the reliable houses. One of the old, established firms of Los Angeles, the Newell Mathews Company of 200 North Los Angeles Street, announces that it is disposing of a limited stock of high grade cars, the Whiting, Davis and Westcott, of the latest models, at the price of a medium grade car. They will be glad to show these cars at their place of business or will give full particulars to anyone interested who will write for information.

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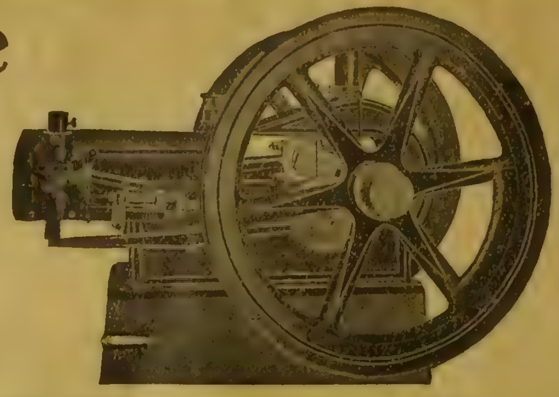

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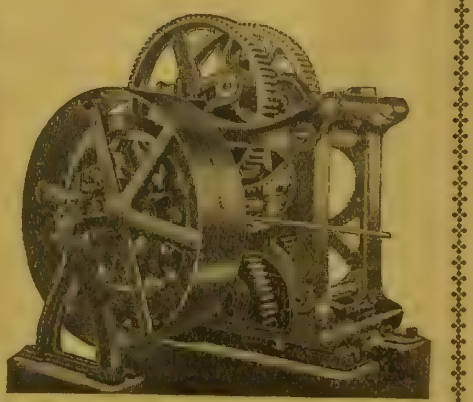

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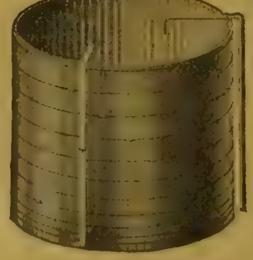

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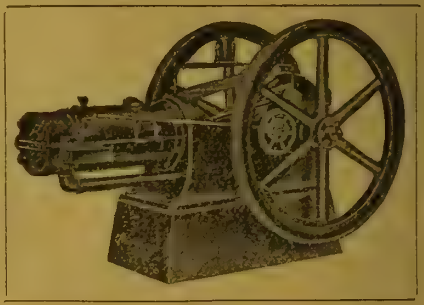

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California Cultivator

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Los Angeles October 13, 1910 San Francisco

WATSONVILLE SHIPS 140,000 CHESTS OF STRAWBERRIES

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THE WATSONVILLE AUDITORIUM

A FORTY-ACRE ORCHARD THAT PRODUCED 50,000 BOXES

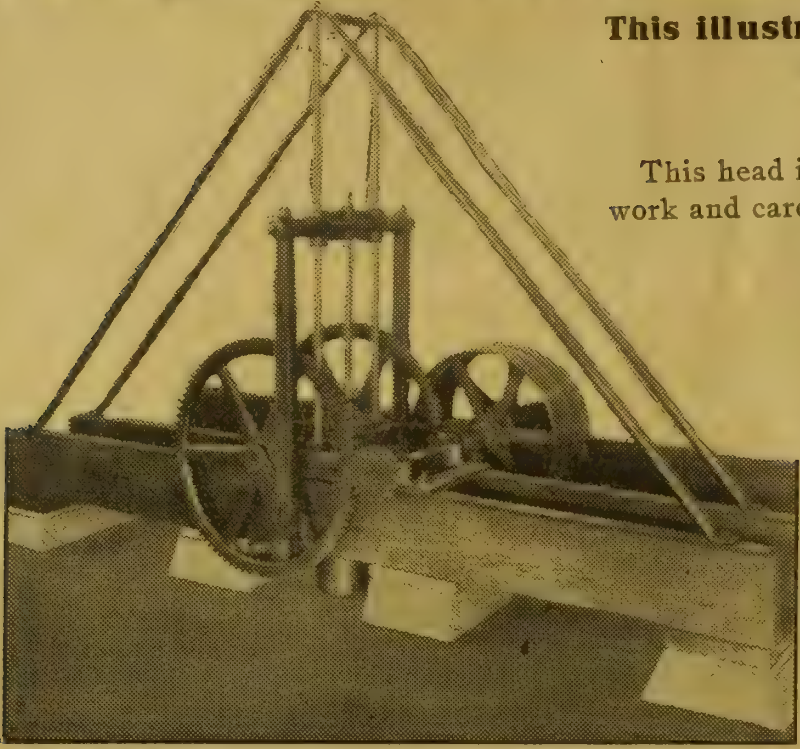
The Great and Glorious Watsonville Apple Show

Scenes depicting the Horticultural Resources of the Pajaro Valley: the California Home of the Apple

An Appreciation.

As Emerson says, it is usually the improbable that always happens. The man who would have predicted ten years ago that California can hold two apple shows in one year, either of which would in importance and individual characteristics eclipse any similar event in this country, would only have caused a smile of incredulity from his listeners. Yet that very thing has happened in the year 1910. The Sebastopol fixture was strikingly individual from the fact that it was the greatest exhibition of Gravenstein apples ever shown in this country; the Watsonville apple show is distinctive from the fact that it exemplifies the Bellflower, Winter Pearman and Newtown Pippin varieties at their best. Yea, more, it shows a larger apple production over a limited area of country than is possible in any other apple growing section of the country. Allowing for these facts, the enterprising people of the Pajaro valley are not only to be commended for their enterprise, but they have in their splendid apple show done the state a real service in making known to the world that California can and does grow a high-grade quality of apple which is destined to travel hand in hand with the kingly orange and the queenly olive—adding new honors to our pomology as the greatest horticultural section of Uncle Samuel's farm. The Cultivator offers its felicitations to the Watsonville Apple Growers' Association. In the language of our only ex-president, the show was "bully."

Gregory's New Pump Head



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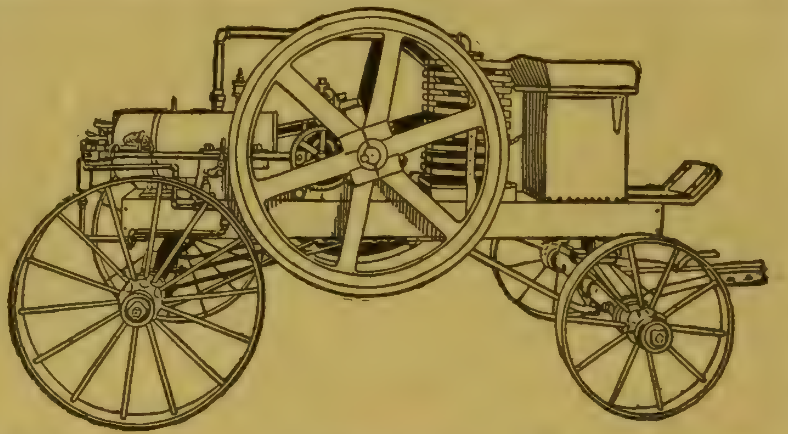

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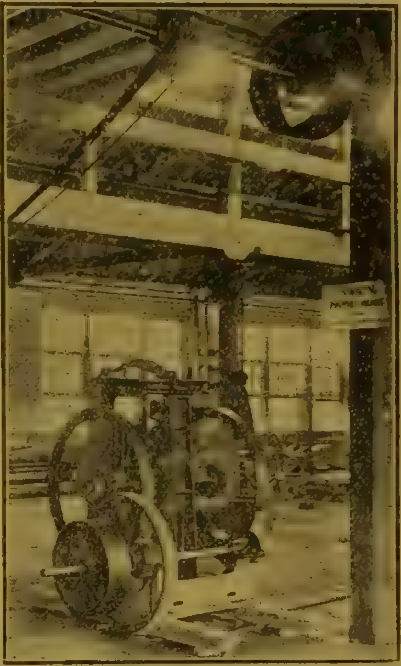

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California Cultivator

Vol. XXXV—No. 15 Los Angeles, California, Thursday, October 13, 1910 Subscription $1 a Year

Watsonville: the Land of the Money-Making Apple

Governor Gillett opens the mammoth Apple Show in a Blaze of Glory.— An event destined to attract Capital and Immigration.— The Pajaro valley. . . By C. B. Messenger

"By George, this has everything else beaten to a frazzle!" is a Rooseveltian expression which involuntarily springs to the lips at the first look at this show. It's simply great! It ought to have been called the State Apple Fair. Many counties are here with fine exhibits. There is Eldorado, Tuolumne, Butte, Mendocino, Modoc, Santa Clara, Los Angeles, San Luis Obispo, San Mateo, Sonoma and Siskiyou, and of course Santa Cruz and Monterey, who grow the pippins.

There are apples in carload exhibits—16 separate carlot entries—apples in boxes, thousands of boxes, apples on plates, a half a thousand of plates; apples built into houses, windmills, battleships, maps of continents, flags, cornucopias; apples which have been in cold storage a whole year; apples built into pies—one of them three feet in diameter and five inches thick—hot pies like mother made, just from the oven, served with cream and a glass of milk by the ladies; apples in jelly, apple sauce, apples canned, apples dried, apples wet—cider sweet, cider hard, cider vinegar—everything imaginable made of apples.

Makes Your Eyes Bulge.

The most impressive viewpoint is perhaps the balcony looking over the main pavilion, with its biggest stage in the state, 100x36 feet. But the most impressive exhibits are those in the carlot class. Six hundred boxes of commercial pack of apples in each entry, the facing layer having wraps removed and every one of the 21,600 apples which can be seen on the top layer of 600 boxes of four-tier apples, as near like its neighbor as two peas. The car exhibits are arranged in geat banks formed by building timber frame like an immense letter A, the exhibits being, of course, on both sides of the A. The A is over 15 feet high and 72 feet long.

One carlot will be Spitzenbergs, as red as a countryman's tie; next to them a car of Belles, conscious of their own beauty but blushing a bit because they are no redder; next, 600 boxes of Pippins, very pale, but feeling mighty well, thank you; then again the rich and deeper red of the Red Pearmain, with Smith's cider occasionally asking recognition. The red apple seems to be winning favor with later plantings.

What It Is.

But what is the Apple Show, and why? A proper question. Something over a year ago the Commercial League of Watsonville conceived the idea of such a show for the greatest apple producing section of the country. There were objections and difficulties. There was no building. The expense would be great. It would take a vast amount of labor. The kicker kicked and the knocker knocked, but a funeral was soon held over their remains. Everybody got busy and voted bonds to build the pavilion, a fine building 110x225 feet with wide balcony all about. Its construction was begun early in July and it is just completed. Its great floor space, including wide balconies, was soon found insufficient and three monster tents were erected alongside, so that over 75,000 square feet of exhibition floor space is available. Then the Apple Annual Association was organized with O. D. Stoesser, president; A. W. Cox, vice president; J. W. Kavanagh, secretary; Edward A. Hall, treasurer; J. A. Linscott, manager, and the following board of directors: O. D. Stoesser, A. W. Cox, J. E. Gardner, E. A. Hall, Hon. W. R. Porter, C. H. Rodgers, G. W. Sill, W. H. Benteen, J. A. Linscott, J. H. Thompson, R. H. Goodchild, Luke Scurich, Mateo Lettunich, F. A. Hihn, E. Steinhauser. The why of the show is given by the management as follows:

First, it was believed that by inviting competition, the local pack could be brought to a higher standard.

Second, it was recognized that a vast amount of publicity would be given the Pajaro Valley.

Third, the publicity thus gained is intended to suggest to many the idea of using the apple as food, where now, many, through ignorance or inappreciation of its food value, have excluded it from the every-day menu.

The rapidly increasing acreage of this very valuable and healthy fruit calls for a campaign of education among those who have not awakened to its value as a food product.

Besides the general good which it works, there are educational advantages to be derived from such an exhibition as is contemplated, since it admits of a comparison of methods in the manner of handling and packing the fruit that can not help but prove beneficial to all, since it may lead to even more economic methods.

Realized.

Now the realization of the hopes and the year's work is here. Watsonville has on her hobble skirt and fruit basket bonnet and the bunting is flung to the breeze.

As an indication of the universal interest I may mention that the churches united in a union of religious service in the Plaza on Sunday. The apple from Eden to the present was preached and sung about. If the Eve of Eden was as attractive as the Eves of today and had a Pajaro Valley apple, it is no wonder Adam couldn't stand up.

A Look In.

I arrived in town Sunday eve at 9:30. The pavilion was still lighted. I broke in at once and under the guidance of Mr. C. H. Rodgers, President of the Pajaro Valley Apple Growers' Association and of President O. D. Stoesser of the Apple Annual Association, enjoyed my first look. Yes, enjoyed it, notwithstanding wading through feet of litter, waste decorations, papers, lumber with nails inviting one to step on them and other refuse of the last stages of the preparation for a big show. Men and women were still busy. Scant attention was paid by the workers to interlopers, but occasionally one would drop on a box while wiping the perspiration from his face, which showed that dead tired look which is apt to come 'long toward midnight after days of strenuous work, and tell of his design and his hope to have it ready by the morning.

There are still scores of exhibits not yet touched. Some lessons from them next week with awards. The judges in quality classes are Geo. C. Roeding of Fresno, Geo. E. Rowe, editor Fruit Belt of Grand Rapids, Mich., and Adolph Levy of San Francisco. The judge of feature exhibits is J. A. Filcher of Sacramento. Judging has begun but will not end for two or three days.

Apple growers are here from all sections of the state and Watsonville is doing the hostess act royally.

Today, Monday, all is not complete, but tomorrow will see everything in apple pie order.

Governor's Day.

Today the Governor is here. The flags are unfurled and the bands are playing. One flag, especially, is honored and that is one presented by the Native Daughters to the city and run up on its staff on the top of the pavilion by the G. A. R. This ceremony followed a parade of a detachment of Naval Reserves, Grand Army, Native Daughters, Native Sons, the Mayor, city officials and other bodies escorting the Native Daughters who carried the magnificent flag made by their members.

The formal opening occurred in the evening with addresses by J. E. Gardner, Mayor P. K. Watters, Pesident O. D. Stoesser, Governor Gillett and C. C. Moore of San Francisco.

Some Features of the Exhibits.

The model of the high school building built by pupils of the school is a striking and excellent reproduction. The school is built mission style. The sides have a facing of evaporated apples with "tile" roof of Red Pearmains. The lawn with characteristic "Keep off the grass" signs is of Newtowns. The whole design is about 20x30 feet.

Next to it is "The kiss of the oceans," an immense design by the San Monte Fruit Co. The base is about 30x30 feet and perhaps three feet high. This base is topped with a rising slope of Red Pearmains. From this rises a Western hemisphere, 15 feet in diameter, done in apples, Canada in Bellflowers, United States in Red Pearmains—with, of course, the location of Watsonville indicated by a beautiful Bellflower, Mexico by Pippins, etc. The two oceans are of evaporated apples. Even the ocean currents are shown. The striking feature is two women's faces brought together in the act of kissing at the Panama canal. Considering the inflexible material in which it is done the result is remarkable.

McDonald & Sons patriotically produce a 13x26 foot flag in Red Pearmains and Newtowns. The effect is fine. While there is a Blue Pearmain, its blue hardly comes up to the blue of the flag, so blue tissue wraps were used.

The Japanese Association has a war vessel. It is perhaps 25 feet long, almost entirely of apples. It is named the Pajaro and the American flag floats from the place of honor.

The old Dutch windmill of the Loma Fruit Company is continually grinding out its "grist" a stream of apples. Its construction is likewise of apples.

Sebastopol, Sonoma County, comes down with large exhibits and striking ones. One feature from her own Gravenstein Apple Show is the "apple transformer," a mining appliance, "patent applied for," by the Sebastopol Association. It consists of a transformer into which apples are carried by a continuous belt and the result is a continuous flow of $20 gold pieces and gold nuggets from the spout of the machine. In the background is a view of Sonoma county orchards with apples being picked, carrying forcefully the idea of transforming from the soil to gold. Gravensteins which have been in cold storage for six weeks for this show are strong features of Sebastopol's exhibit.

The Red Men have a characteristic apple representation of an Indian tepee.

Apple blossom honey is represented by a combination of honey and apples worked into a large apple blossom.

Jones Bros. make a large display of vinegar bottled and barreled, as does the Heine & Kreiger Company Cider and Vinegar Works, also the Martinelli plant.

The Wm. McGowan orchard shows its riches by exhibiting an immense golden cornucopia from which is pouring a great stream of Bellflowers.

The Panama-Pacific Exposition people have a large booth and are everywhere present appealing for "A Solid West, San Francisco, 1915."

The background of the great stage is an immense eagle of Red Pearmains and other apples.

The Strongest Point.

The educational feature of the show is the commercial pack and the quality of the fruit exhibited. Especially is this true of the carlot exhibits. As a rule the quality is high, but the lesson of greater uniformity needed. Some have exercised greatest care; others are indifferent. This comparing of notes will make a better showing next year.

In the carlot class Sebastopol covers 200 miles with her gallant six hundred. They are beauties—all Spitzenbergs, perfect—almost. Messrs. Newcomb, Hale and Swan are in charge. Besides the six hundred, 856 other boxes are entered in other sections.

McDonald's car of Bellflowers is a beauty, uniform pack and of high grade.

Faraway Modoc comes down with a small exhibit. It was shipped 35 miles by stage, via narrow gauge to Reno, Nev., thence to Watsonville, slightly the worse for the long wear but still showing remarkable qualities, many apples weighing over a pound each. The Queen of the South is one of their finest apples, of fine texture and flavor. There were also Wolf Rivers, Soledad, Winter Banana (a coming favorite, by the way), Jonathans, Mammoth Black Twig, Blue Pearmains and Newtowns. In charge of G. E. Morrill.

Tuolumne will be heard from one of these days as an apple producer. In color, in polish, in crispness, in every way her exhibit is great. In size it is small. A good judge of apples said to me, "There's quality which will make the apple market take notice one of these days." The King Davids, so red that they were almost black are wonders. The Winter Bananas, Wolf Rivers and Red Bellflowers are in fine form. A little beauty is the Lady. It is very small, but so attractive in its shading and polish that all stopped to admire.

Alongside is Butte county with fine fruit, then Eldorado with entries in practically all classes.

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The Great Soil Convention

Ways and Means of Maintaining Soil Fertility in our Citrus and Deciduous Orchards.—Cover Crops.— What the Agricultural Experts say.

The appreciation of the necessity of bettering soil conditions was proved by the large attendance at the soil convention held in the city of Los Angeles last week. Last week's Cultivator referred to the opening sessions, and further, to the fact that the audiences were too large to be accommodated in the Chamber of Commerce lecture room. Therefore the sessions were transferred to the more commodious Blanchard Hall which seats 800 people, and practically all seats were occupied during every one of the five days.

Of course it is impossible to keep any convention strictly to the text, and wherever citrus growers are present, "What causes the greening of Valencias?" "What causes the splits of Navels?" "What causes curling of leaves?" "What will make orange trees bear profitably for a hundred years?" and a thousand others questions will crop up. The question box brought these and many others to light, but notwithstanding these divers queries the matter of bettering soil conditions was touched from practically every standpoint. The problem was considered, chemically and physically, but probably the greatest interest was accorded to Dr. Lipman's discussion from the bacteriological point of view. Of course Dr. King's great experience and knowledge of soil matters made him the strong drawing card and his lectures were listened to with most intense interest. As he said, he could only touch the outer edge of some of California's difficulties and did not wish to be considered as touching upon the subject in dogmatic terms. His efforts were largely along the line of the citrus grower's interests to show how clean cultivation is working against him. The chief aim of the grower should be to replace the humus which is burned out of the soil by clean cultivation. This is one of his most difficult problems, especially where he has to deal with large trees which make it almost impossible to grow green stuff between them. Dr. King insisted that the most economical and indeed the only practical way to return this lost humus to the soil was by green manuring. The state does not begin to produce enough stable manure to make it even a factor; besides it is too expensive.

Another difficulty confronting the grower is the shortage of water preventing the proper production of green manure crops. Unless there is sufficient water so that the green trees will not suffer because of the moisture taken up by the green manure crop, the loss from its growth may be greater than the gain.

Dr. King also impressed upon the growers that nitrate of soda must be used with the greatest caution, in fact, he discouraged its use to any extent because of the possibility of injury through the deposit of carbonate of soda left after the nitrogen is extracted by the roots. Some of the citrus men insisted that to set a full crop of oranges in the spring when natural soil conditions were unfavorable to the development of organic nitrates, a quick-acting nitrate must be used. Nitrate of lime, the new substance produced by an electrical pocess, was recommended by Dr. King, but instantly the growers suggested that the production was so limited that it would not begin to meet the requirements.

Best Subsoiler.

In the matter of subsoiling, Dr. King recommended a deep growing green manure plant. Alfalfa especially is one of his favorites. As he expressed it, no subsoil plow can be used which will go four feet into the soil, yet this is readily done by many of these deep-rooted legumes, with the result that as the roots decay air is carried down to the lower depths, thus making available much of the locked-up fertility. Air is as necessary to maintain and increase soil fertility as is the occasional addition of the actual elements needed. Indeed, it is more essential for it acts directly upon the bacteria which reduce these elements to a form available for the plant's needs.

One of the best aerators and subsoilers in the world is the deep rooting leguminous plant. Alfalfa, for instance, readily penetrates four or more feet, then as the root dries, air space is made far deeper than any subsoil plow can ever go.

Conservation of moisture was given much attention during the week. Dr. King called attention to the fact that growers as a rule, in considering the decadence of orange trees, failed to take account of the fact that an increased amount of water is required as the trees grow older. Many growers are giving the same amount of water to full bearing trees 15 to 20 years old as to trees that have been set out only two or three years. The doctor emphasized the fact that the amount of water required increases with the decrease of fertility, that is, it takes a greater amount of water to produce the same results if there is the least deficiency in any plant element, and this deficiency is sure to result unless the greatest care is taken to maintain the balance. Again, the constant reduction of humus decreases the capacity of the soil to absorb moisture, hence greater evaporation and leaching takes place. In enforcing this point, Dr. King mentioned the fact that 100 pounds of clean river sand will absorb 25 pounds of water, holding it only four hours, whereas the same amount of sand fully supplied with humus will absorb and hold indefinitely 200 pounds of water, or an increase of eight fold.

In the Orient.

Most interesting was Dr. King's description of methods in China and Japan, countries which for thousands of years have maintained a dense population. To do this they have found it essential to save every scrap and parcel of organic matter. This is usually composted with subsoil and then taken to the fields to be applied for the coming crop. No work is done in adding green manure or other fertilizer directly to the soil. The fields are required to produce from one to three crops every year and no time can be allowed for the soil to fit itself to newly applied fertilizer. Therefore it is composted with subsoil and this compost is carried directly on the backs of laborers to the fields, often to the extent of 70 tons to the acre. To every acre of desirable land Japan is supporting some three people and several animals. China is still more congested. While these extreme measures for maintenance of fertility may never be practiced in this country, they are an indication of some of the steps which should be followed.

The statement was made that improper handling of manures in this country resulted in the yearly loss of nitrogen, figuring on the basis of eight cents per pound, to the value of one hundred and forty million dollars.

In the matter of cultivation, Dr. King discouraged the use of planking or undue smoothing of the surface mulch. The maintenance of a deep mulch he did insist upon, but where it was made unduly fine it compacted too much and defeated the purpose for which it was maintained. There is less loss of moisture through a comparatively open soil than through one which is fined to an exceptional degree.

As to the time of applying barnyard manure, Dr. Lipman in referring to its beneficial effects in increasing the

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ecomposing bacteria in the soil, said hat he would apply it any time of he year it could be secured. But alays get it under the soil as quickly s possible. When allowed to dry ut fresh manure loses many of its acteria. If cultivated into the soil s deeply as possible, fairly good reults are secured; still better if lowed under.

After discussing the beneficial and njurious bacteria in the soil, Dr. ipman touched at length upon the dvantages of green manuring and its bility to increase the beneficial baceria. This was of such practical nterest to the growers assembled hat a unanimous request was made hat Dr. Lipman give an additional ecture on the subject of green manre cops. This contained so much f value to many of our readers hat we give it almost in full in this ssue.

over Crops.

Prof. Norton gave several addresses n the subject of cover crops and the nanagement of citrus soils. In these e maintained that many orchardists vere overestimating the value seured through the application of green nanure crops. Especially did he beieve that the amounts of green tuff and humus secured were far ess than generally estimated. He eferred at length to facts given by im in an article in the Cultivator everal months ago, showing by most areful measurements and weighings hat but very few orchards have proluced the 20 to 25 tons of green stuff per acre which has been claimed. He nentioned one instance where an avrage crop showed 49,000 pounds of reen manure material on one acre. Prof. Norton felt that the Canadian ield pea or vetch were preferable o most of the legumes. He spoke of Melilotus Indica, which, while making an exceptionally tall growth, proluces less tonnage of green manure han some of the lower, more compact growing plants. As a humus producer barley is of exceptional vale, especially in orchards densely haded; but it only carries into the soil the nitrogen taken out by its growth, as is the case with all plants other than legumes.

The comparative loss of water on nulched ground and on that which s not mulched was made very emphatic by the following figures showng loss of water in 100 days. In celery peat lands which are naturally exceedingly rich in humus, without any mulch the loss was 5.48 inches; with one inch of mulch 3.24 inches; two inches of mulch 2.42 inches; three inches of mulch 2.2 inches; four inches of mulch 1.98 inches. On a rich loam soil in 100 days the loss of water without mulch was 6.39 inches; with one inch of mulch 3.51 inches; two inches of mulch 2.55 inches; three inches of mulch 2.38 inches; four inches of mulch 2.23 inches. On heavy clay land without any mulch the 100 day loss was 16.71 inches; with one inch of mulch 11.01 inches; two inches of mulch 9.08 inches; three inches of mulch 8.6 inches; four inches of mulch 7.74 inches. The word "inch" above used refers to the rainfall inch.

President Wheeler.

One of the interesting events of the session was an address by President Benjamin Ide Wheeler of the State University. He referred to the old days on the New Hampshire farm and said that every one of the farms in the state, he believed, sloped to the north and that the rock and other soil conditions made its study in that state a very different proposition from that in California. He expressed pleasure in noting the increase of human interest of the masses in importance of soil and country life conditions and deprecated the grasping of great bodies of land by large corporations which placed that land where there could be but little human interest in it. He alluded to the pleasure of ownership and the fact that the home makers of this country are its strength.

Some Resolutions.

There were fewer resolutions and less business connected with this convention than is usually the case. It was almost entirely an educational convention. The Secretary, Mr. W. E. Packard of the University force, had little to do other than to sign ticket receipts for the attendants.

One strong resolution unanimously adopted was one referring to the destruction of the Los Angeles Times building and the sacrificing of more than a score of lives by the explosion on the morning of Oct. 1. This outrage it has almost been proved was the result of criminality on the part of some one supposed to be opposed to the attitude of the Times on the labor question. The paper has consistently opposed the labor unions for years. The resolution unqualifiedly condemned the crime.

Only one or two motions were made, one called for the appointment of a resolution committee to consist of seven orchardists. This committee reported a series of resolutions in effect that: whereas, there is a great need for more available information, both general and specific, relative to the mechanical handling of our orchard soils, good and ill effects likely to follow the use of the various fertilizer mediums, cumulative effects of irrigation practices, proper and economical use of water for irrigation, and other vital problems too numerous to mention here, all of momentous significance, to this state;

Therefore be it resolved that it is the unanimous sense of this meeting that this convention has been wisely and opportunely called, and those responsible for it are hereby most heartily praised and commended therefore;

And be it further resolved that to Dr, King and to Dr. Hopkins we extend our especial appreciation for having come so far to give us the benefits of their full knowledge and experience in the handling and solving of these soil problems, and

Further resolved that this convention hereby declares its approval and heartily support of the work which the University of California is now doing both at Whittier, under the direction of Professor Smith, and at Riverside, under the direction of Professor Norton, and other points in the state, toward the investigation and solution of the problems enumerated above.

Whereas, having found in Dr. Lipman a capable, thorough and prudent scientist, one whose technical ability we not only admire, but also his splendid spirit; that we congratulate our state on securing Dr. Lipman and thank him for his contribution to this convention.

Whereas the citrus industry of the State of California and Arizona has been built up to its present magnitude on a virgin soil in an arid and semi-arid region, where nature has been able to store up during the past ages only enough plant food in the soil to maintain an orchard in vigorous condition but a few years without supplementary fertilizers and manures applied by the grower at great cost of labor and expense, and

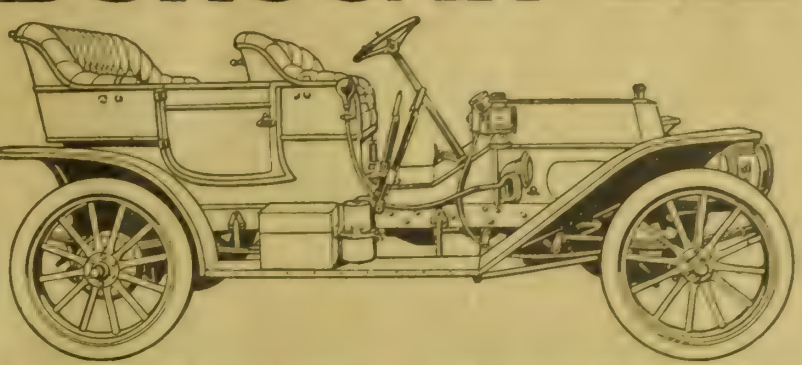
Whereas every acre of land devoted to this great industry which represents an annual gross production in California alone of over 20,000,000 dollars, must be irrigated from a supply of water so meager that most rigid economy must be exercised in its conservation and use, and

Whereas these foregoing conditions coupled with the varied and manifold types of soil on which the citrus tree is growing, involve the horticulturist in a labyrinth of problems of soil physics, soil chemistry, soil bacteriology, so subtle and complex that means their equipment and education preclude more than the most superficial attempts at their scientific and practical solution; and

Whereas, the value of this work would greatly aid the grower of orchards of every description, whether deciduous or citrus, irrigated or unirrigated, not alone in California but throughout the entire West and South;

Therefore be it resolved, That our State University be urged in addition to its present able corps of investigators to secure at whatever cost of the ablest scientific men of the country to assist it in solving

DUROCAR The Car for the Farmer



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some of our problems, and we hereby pledge ourselves to use every effort to secure special appropriations by our State Legislature to be used for this purpose and no other; and we urge upon the University of California the advisability of concentrating its funds and energy on as few lines of work as possible; that they may be prosecuted still more rapidly and more thoroughly to definite conclusion.

Another resolution referred to the unfortunate calling home of Dr. Hopkins to the bedside of his wife, expressing sympathy. Another extended the thanks of the convention to the Chamber of Commerce and others who had joined in making the convention such a success. A resolution was also passed recommending an increase in the chemistry force of the State University so that soil analysis might be conducted for the benefit of the farmers at a nominal cost, and finally, another was carried for the appointment of a legislative committee to present the matter of increasing the appropriation for experiment stations.

Cover Crops for Green Manuring

DR. C. P. LIPMAN.

The atmosphere is the source of our nitrogen supply. We live at the bottom of the great aerial ocean made up of four-fifths nitrogen and one-fifth oxygen, but in spite of the great tonnage of nitrogen over each acre of land, it is difficult to extract it and make it available for our use. Only the leguminous plants are able to take it up and transform it into an available supply. We also need some means of conserving moisture in the soil and bringing about proper air conditions. Therefore we need humus, and we want to see what use we can make of natural fertilizers before going to the trouble and expense of buying them.

Green Manures.

There are two classes of green manures. The non-leguminous, such as barley and rye, return plenty of humus to the soil, but no nitrogen except what they take out. The second class, the leguminous, such as the vetches and peas, not only add large tonnage of green material for production of humus, but add immense quantities of nitrogen from the atmosphere, providing they grow a plentiful supply of nodules. The non-leguminous green manures also have an effect on these nitrogen transforming bacteria through furnishing quantities of humus to the soil, because humus is the seat of the activities of all soil bacteria; the larger the supply of humus, the more plentiful and vigorous will be the soil bacteria. The leguminous crops, while possessing this quality consequent upon the formation of humus, to the same extent as the non-leguminous, in addition add nitrogen directly. One influences the transformation of nitrogen merely; the other influences transformation and fixation in the soil.

Humus.

The growth of plants depends upon: texture of soil, moisture and temperature, and the proportion of humus in the soil bears an important relation to all these, and this is why the addition of humus is such a paramount factor in agriculture. Humus is any organic material in the soil in process of decay. Anything that is organic in nature decaying in the soil will produce humus, and it is the substance which is the most tender and the substance which will most readily decompose which will give us the largest amounts of humus and will be most readily acted upon by soil bacteria in transforming it to our advantage.

In a light soil humus cements the soil particles and makes it capable of holding water better; in heavy soils it loosens it up and makes the water drain better and precludes the possibility of water-logged conditions. By regulating water supply in the soil temperature conditions are regulated. Water heats slowly and cools down slowly. Plants feel changes in temperature. Humus is the seat of all the far-reaching chemical activities that are going on in the soil through the agency of these soil organisms.

History of Cover Crops.

The old Romans found that they could grow better crops of potatoes on the Campagna on fields where clover had grown and been turned under. The fact they recognized without examining into reasons and by following this tradition they maintained a fairly good fertility. Due to other circumstances the Campagna at the present time is nothing but barren waste. After the retrogression of the Middle Ages, farmers again began to notice the effects of green manuring. Now experiment stations and practical growers are taking up a thorough study of the subject and have achieved notable results. As one instance may be mentioned the work of Prof. Shaw of the state experimental grounds at Ceres where he has, by the use of green manure on sandy soil, in four years time increased the yield of wheat from 14 to 44 bushels to the acre.

Especially on light sandy soils the use of green manures makes it hold water and makes the phosphoric acid and potash which plants take out of the soil combine with humus and thus makes them more available. It adds water holding capacity, soluble plant food and nitrogen. On clay soils it gives better aeration, and increases solubility of mineral constituents of soil, thus making them more available as plant food.

Objection to Green Manuring.

There is one serious objection to green manuring, especially on light soils. For every ton of dry material produced in the plant 300 tons of water are evaporated through the leaves. This means that a green manure crop on light sandy soil takes out considerable moisture and so takes moisture away from the trees. It may be the means of drying out the soil to such an extent that these trees will not produce a maximum crop. This is where the danger lies, and in order to control the matter we must know conditions and bear them in mind. If we think there is not sufficient moisture to decompose the material, take part of it out. Even supposing the trees may get sufficient water and the green manure crop may get sufficient water to make a good growth, there may be danger that the green manure crop and the trees have taken out so much moisture that when we attempt to turn the crop under there may not be sufficient moisture to allow of the activities of the bacteria that produce humus. To avoid this, the green manure crop must be put in as early as possible so as not to remove too much water and yet get as much green material as possible, while leaving enough moisture to plow under the green manure crop before it comes into blossom. The more succulent the material the more readily it decays. A green manure crop turned under in a light, sandy soil starts to decay; the supply of water gives out and great numbers of the bacteria are destroyed; then, even though sufficient water is supplied, the decay must be slow. This does not hold for the clay soil where we rather want to drain away the water.

The cow pea has been the farmers' bank in the cotton fields of the South, the velvet bean in Louisiana; crimson clover and the cow pea have been the standbys in Delaware, Maryland and New Jersey; in this state the grain farmers are beginning to recognize the fact that the Canadian field pea is a great boon. If we go at the matter of green manuring with intelligence we will not only increase the yield of our crops but improve their quality, but all the conditions must be considered and borne in mind.

We also have to consider the effect of green manure crops on succeeding

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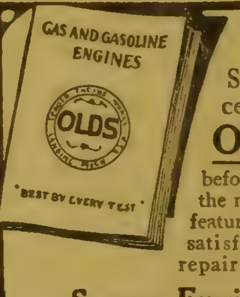

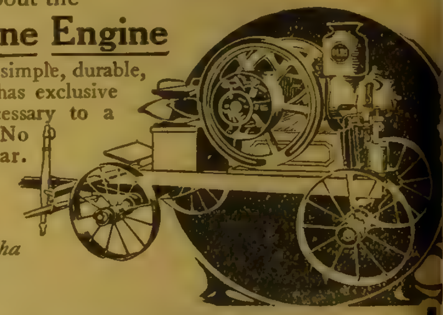

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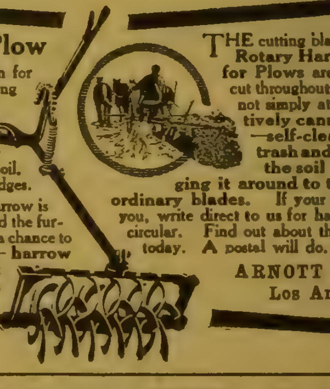

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crops from a chemical standpoint. The percentage of nitrogen in the soil has been increased by green manuring in some instances from .02 to .17. Where large amounts of green manure are plowed under the intensity of decomposition in light sandy soil where the bacteria get plenty of air, is so great that nitrogen is added in such large quantities as to change the quality of the fruit and retard ripening.

It is possible to supply an excess of nitrogen on cereals, for instance. In some European sections where heavy green manuring has been practiced the wheat is inclined to lodge.

Tree and Shrub Fruits

EXPERIENCE IN WALNUT CULTURE.

Something over twenty years ago I bought from the late Mr. John Rock, nurseryman, about two dozen walnut trees, of the Praeparturien variety. These were seedlings—differing much in shape, size and quality of fruit, as also in time of blooming. They were all fairly good growers and early, abundant bearers; in fact, they had so much of this latter quality that I wished often they would not set so much fruit.

Of later years, however, the majority suffered from some kind of sunburn, which injured the nuts more or less and made them unsalable.

About fifteen years ago I received some more walnut trees from the same gentleman. Among this lot were two varieties grafted on black walnut; these trees sometimes throw out sucktrs from the original stock. These trees are very vigorous and healthy; as to the time of blooming they are the latest I have on my place or have seen anywhere else, and though they are planted in the "warm belt," in which late frosts are unknown, they are nevertheless, unsatisfactory bearers.

As to the quality of the nuts I wish no better, and from the assured fact that they are grafted on black walnut stocks, I fear no disease of any kind.

The labels of these trees have got lost, yet I have good reason to believe one variety is the Mayette and the other is the Franquette. The nuts do not grow quite so large on my place as I have seen on another in the valley, where the soil is richer and deeper, but the principal trouble with my trees I am now fully convinced is the fact that the catkins or male blossoms come out earlier than the pistillate or female blossoms.

Male Blossoms Earlier.

I also have observed that on most all late-blooming varieties the male blossoms came out not only earlier than the pistillates, but are rather scarce in numbers. Verily, I have at times wondered, where did the pollen come from when seeing the embryo of the pistillates growing into perfect nuts and all the catkins lying withered on the ground.

Looking around this last blooming season to remedy this unpleasant condition, I observed the behavior of many trees growing along the different roads when I was driving to town and I must say that I have not seen a single tree of the many varieties of English walnuts which would represent an ideal tree capable of furnishing plenty of pollen at the time when mine are in bloom.

But when I had failed so far in finding the proper tree amongst the English, I found myself agreeably surprised in learning that nearly all the black California walnut trees are very late in blooming, just in time for my Mayettes and Franquettes, and the further fact is that these black walnut trees have not only a great many catkins, but also an enormous quantity of pollen.

That I have singled out of these many blacks, one in particular from which I will request the owner for some scions to graft in the top of mine, I need not say.

Of course this is only to remedy a fault of old established trees. Should the defect of these varieties be more extended then a more radical remedy would be to grow a new variety (hybrid) from nuts obtained according to this proposed method.

From what I have learned in another line of somewhat similar difficulties, I am fully convinced that even a small percentage of blood of black California walnuts mingled with a Mayette or Franquette will do away with such bothersome, ridiculous work as the grafting on the root and also the grafting in the top.—Wm. Pfeffer in Mercury-Herald.

GYPSUM.

Answering a query as to the effect of gypsum on cultures of bacteria in soil, also as to its action on soils, the Country Gentleman says:

"Gypsum is known to facilitate the decomposition of humus and fresh vegetables and animal matter in the soil. It also serves to increase the available potash. In these respects it resembles lime, but differs essentially from the latter in that it cannot neutralize acid. Hence, if the soil is sour, or is likely to become sour, gypsum cannot be depended on to correct the defect. A hundred years ago the use of gypsum was common along the Atlantic Coast. The results secured by many farmers indicate that applications of one or two bushels of gypsum per acre in conjunction with lime often increased the action of the latter. For this reason no objection could be raised to the use of smaller amounts of gypsum together with lime. But whether gypsum be used or not, lime must be applied in liberal amounts on all humid soils, except those derived from limestone (and occasionally even on these) for the best results with alfalfa. Gypsum will not injure the cultures of bacteria used for inoculation of alfalfa and of other legumes."

THE APPLE AND THE BOY.

Now that the apple is a fruit well in the spot light before California growers and packers, we feel quite sure the following pertinent reference to this fruit from the pen of John Burroughs will find a response with all of our readers:

"The boy is indeed the true apple-eater, and is not to be questioned how he came by the fruit with which his pockets are filled. . . . Whether he be full of meat or empty of meat, he wants the apple just the same. Before meal or after meal, it never comes amiss. The farm-boy munches apples all day long. He has nests of them in the hay-mow, mellowing, to which he makes frequent visits.

"The apple is indeed the fruit of youth. As we grow old we crave apples less. It is an ominous sign. When you are ashamed to be seen eating them on the street; when you can carry them in your pocket and your hand not constantly find its way to them; when your neighbor has apples and you have none, and you make no nocturnal visits to his orchard; when your lunch-basket is without them and you can pass a winter's night by the fireside with no thought of the fruit at your elbow, then be assured you are no longer a boy."

We suggest to our apple growing friends that they adopt the above as a text and use it on all occasions in the disposition of their product.

Trim a little every year, rather than much in any one year.

SPECIAL NOTICE TO MELON GROWERS!
Plant your cover crop now and double your yield of melons. Sow
Vetch, Fenugreek, Canadian Field Peas, Burr Clover

If you are in the market for any of the above for cover crop, write us for prices, stating quantity, and we will make you close prices.

We also have several tons of small Yorkshire Hero peas that we screened out of our seed stock which we are offering at $3.00 per cwt. If you would sow them in your orchard you could harvest a crop of green peas and get a fancy price in the San Francisco market and also fertilize the orchard.

Now is the time to plant onion and cabbage seed. We can furnish them in any quantity.

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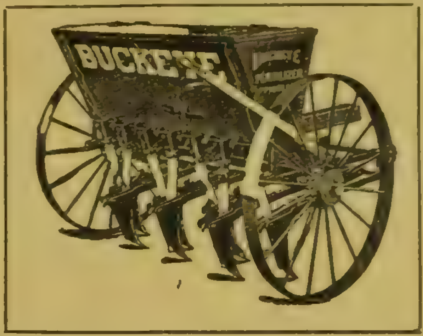

We have sold a great many carloads of these drills in Southern California and the Buckeye is now recognized by orange growers and fertilizer men as the best drill made for handling commercial fertilizer. Its low wheels, proper sized box, and large feed openings giving great capacity when desired, make it especially adapted to orchard use. This drill also made to successfully handle tankage.

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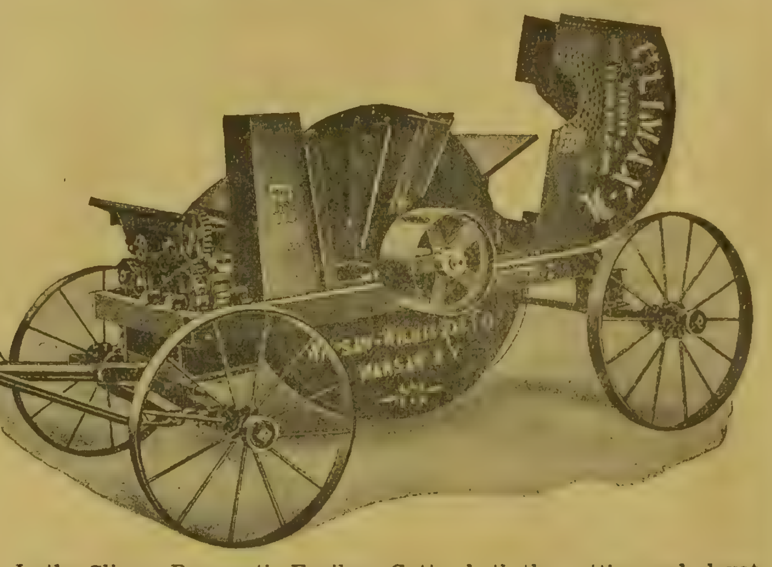

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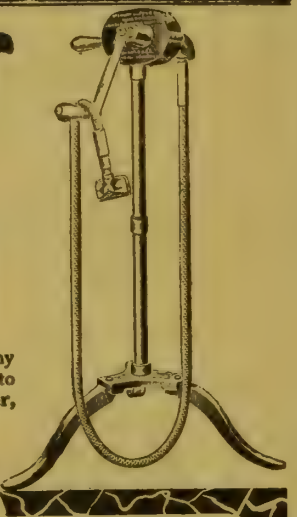

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ON THE RANCH.

By Mrs. M. E. Sherman.

The warm days and cool nights are hastening the corn along to ripeness. The deep shadows that are dissolved in the early morning as the sun strengthens, add to the beauty of the country. The vines are hanging full of the deep red grapes and on the olive trees the berries are turning red. All vegetation is hastening to ripen fruit and seeds before the winter long sleep comes on to rest the tired ones. Only the orange trees seem to keep awake and not need the long rest of the peaches and pears. It is a wonderful time of beauty and peace, the closing of the long summer season. Already the hazy shadows are turning blue and as the days shorten last well into the morning.

Peace.

The Press has announced that California is more like Palestine than any other country. How long they have been in discovering this; Any Bible reader knew that on a Fresno ranch one could quote many texts descriptive of the every day look of things. It seems to me that the Californians ought to be more devout than they are, living as they do among the very living things that inspired so many Bible descriptions. Peace on the ranch is usually badly broken up by Sunday joy riders howling around. I presume they consider it singing! The autos are proving a nuisance as they are run recklessly around the house and buildings. The auto is convenient to the farmer to get into town quickly, but it is also convenient for the town people to run longer distances into the country. Do not understand that there are not more respectable people driving autos than disreputable ones, but the good folks move along and attend to their own business, while the rest come out to make the country suffer the things they could not do unmolested in towns. We are reaching the stage where locked gates will be placed on the ranch at night to keep off these unwelcome intruders.

Cutting Fences.

The main travelled roads are left by those intruders and when they run off into side meadows and find the land fenced, they cut their way or tear down the fences to escape into the highroads by a short cut. The last people that tried that got fooled badly by finding a deep ditch with water between them and the highway. After tearing down the fence in three places they gave up and came out the way they had entered. In the meantime a neighbor in the early morning observed the torn-out fence and telephoned, or the cattle would have been into the vineyards around us doing mischief. Cows dearly love grapes and can get away with a great many in the course of a hour if unrestrained of their liberty. The grapes seem not to go very well on their stomachs, as they sometimes cause impaction and result in the death of the cow.

Corn.

The corn crop this year is much less than usual on the ranch as we had to cut and feed much of it green on account of the falling off of the usual water supply in the ditch in August. The one heavy field that was left has done well and is about ready for the silo. It may be held back until we can secure the alfalfa cutting from a neighbor to finish filling. It pays us well to buy up the green alfalfa and to fill up all the spare places. This enables us to keep a few more cows and to have a little more manure to spread out on the land. How everything loves silage! The two old horses, Topsy and Anna, now rather thin in their old age, will fatten out into renewed youth when the mangers are filled with silage The cows will then require no grain. (To keep them going while on green corn we have to feed a little grain right along to the fresh ones.) The milk flows from their udders when they are coming into the barn now and when the silage comes it will probably be a case of having to milk three times a day instead of twice.

Ensilage.

The dream of the dairyman of full pail and big creamery checks is possible all the time when silage is the principal feed of the herd. I went over the entire cow herd yesterday as they stood in their stalls to see how the week past had used them in the way of feed. They had lost a trifle in weight though they had had rolled barley and dried brewers grains twice a day. The green cut alfalfa in their mangers was soft and succulent. What did they lack? Some long dry stuff, as their feed was going through them too promptly to make flesh. The mangers in the yard were filled this morning with some coarse, rather woody alfalfa that was saved for this very purpose to fill in its own niche. These cows will then be able to retain the food longer in their stomachs and receive more benefit from it The fact is that it requires much less well assimilated food to produce the same amount of nourishment than a food that is passed through the animal hastily. The Fletcherizing of the human family has proven this to be a fact. A small amount of food well chewed to mix with the saliva has the same effect as double the amount of food when taken hastily and not mixed with the natural juices provided for this purpose. The cows cannot regurgitate all their food well unless they have plenty of long coarse stuff to bring it up into a good cud. When the cows are doing well in the way of digestion, their sides should be full when they are just fed. No matter how strong the dairy type is in them they will be the better for full stomachs though the backs and the hips can never be filled out completely. The dairy line in a young cow is often only developed on the lower side. The udder is looked at for its shapeliness and as to the size of the milk veins. The face of the young heifer with her first calf takes on a sweeter expression when she comes into the herd as a new member full of energy. Sometimes the old cow surprises one, too. We have one old one that was coddled through last winter as a matter of sentiment, that surprised us last week by presenting us with a fine little heifer calf. The boys are calling it Margaret's Surprise, so I suppose it will go on the books under that name. It is very hard to give up the old animals on the ranch—to sell them to be ill used. I have two old horses and this old cow and a dog eighteen years old on hand to coddle. No, there is no

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oney in it, only the sentiment of the ing. It keeps one from growing ard to have these dependent ones, nd in that way enriches the life if does not fill the pocket book.—M. E. herman.

ALIFORNIA'S MILK STANDARDS.

The California statute regulating ilk standards requires that 3 per ent shall be fat and 8.5 total solids. kim milk must contain 9.25 of solids d condensed milk 24.5 solids, of hich 27.5 is fat.

Municipal regulations of inspected iries usually require 3.5 or 3.4 of fat d inspectors of the different cities and firm for these standards, while any milk dealers are equally deterined in favor of 3 per cent as a miniium. These dealers represent the ceptional herds, in which Holsteins edominate, while possibly 80 per nt of dairy herds of the state used the milk trade produce an average 3.6 of fat and seldom under 3.5.

The Milk Commission of the San ancisco Medical Society requires 3.5 r cent and in its report on certified ilk, for 1909, the three dairies supplyg certified milk have an average of 7 fat and 8.7 solids The range was follows: Timm's dairy, Dixon, 3.2 4.7; Ideal, San Anselmo, 3.3 to 4.5; arren, Menlo, 2.7 to 5.1 The latter s had its certificate withdrawn. Perps a basis that would fix the miniim of 3 per cent from November to May and 3.5 from May to November would pave the way to the higher basis. It is a hardship to convict a man when his cows are fresh and giving the lower test, especially as he makes up for it while they are drying up in the fall.

There ought to be some common-sense basis on which the inspectors and dealers can agree and a conference between the two interests should be had, before the Legislature meets, as the municipal health boards have determined to break the present state law and there is no evidence that the owners of large herds of Holsteins and the dealers handling this class of milk are willing to concede a higher minimum than 3 per cent.—Western Creamery.

BARB WIRE CUTS.

More good horses have been ruined or blemished from the introduction of barb wire than from any other cause. When a horse gets his foot over a wire, instead of trying to avoid injury to the leg, the animal will struggle violently.

The wounds made by barb wire are always infected, so that healing takes place by the formation of granulation tissue. This being the case the wound sometimes heals too fast and a large tumor forms. The skin cannot grow over this tumor, and a raw, bleeding surface remains. The common locations of barb wire cuts are in front of the hockjoint, below the fetlock, along the cannon bone and across the breast. Wire cuts in front of the hock-joint are often very serious, the wound usually extending through the tendons and into the joint.

Careful Treatment.

In treating a wire cut, the wound should be kept absolutely clean and exposed to the air and sunshine. When the wound starts to heal, it should not be irritated by washing the raw surface or by removing scabs which have formed. Liquid disinfectants are best applied by allowing the fluid to be poured onto the raw surface, not by rubbing the wound with cotton saturated with the disinfectant.

Follow the disinfection by covering the wound wtih some good healing powder that is both astringent and disinfectant. Should the wound heal too fast, use some form of caustic to remove the excessive granulation tissue.—C. L. Barnes, Colorado Agricultural College.

MILKING MACHINE EXPERIMENTS.

In a late bulletin issued by the agricultural department of the Danish government, N. O. Hoffman-Bang gives some interesting data: The experiments were conducted with the L.-K.-Gillie milking machine on the Ourupgaard dairy farm during the seasons 1907-8 and 1908-9. Four uniform lots of 10 cows and 4 heifers each were used in the first season's experiments, when two of the lots were milked by machine and two by hand during an experimental period of about 3½ months. One of the hand-milked lots was stripped by hand after having been machine-milked, while this was not done wtih the other lot until after 42 days from the beginning of the period when it was deemed necessary to do so on account of the decrease in the milk yield of the cows. In the second season's experiments 4 lots of 14 head each were formed, namely, 2 of aged cows and 2 of heifers; one of each of these was milked by hand and the other by machine. In this experiment the new Thule teat cup was used, which seemed to render is unnecessary to strip the cows after they had been machine-milked.

The results of the experiments showed that nearly the same amounts of milk were, in general, obtained by either method of milking. For the aged cows, however, hand milking appeared to give a small increase over machine milking, while the opposite was true for the heifers. The chemical composition of the milk was not affected by the method of milking adopted. No special difficulties were met in operating the machine, and the cows stood quietly during the process of milking. The great difference in the ease of milking different cows and heifers by hand was found to be not nearly so pronounced in machine milking.

The results obtained indicate that one man with two machines (milking 4 cows) can do about the same work as three hand-milkers, and can milk 50 to 60 cows in 2 to 2½ hours. The bacteriological examinations of the milk drawn by the machine and by hand showed that machine-drawn milk may have a lower bacterial content than that of milk drawn by hand if both the machine and the teats of the cows are kept scrupulously clean. Care in keeping the teats clean is especially important from the fact that bacteria in dirt adhering to the teats are likely to be sucked into the milk pail with the air and will tend largely to increase the bacterial content of the milk.

Sugar Beet Pulp takes place of green grass as a milk producer. 40c per ton. Los Angeles Sugar Factory.

GRAIN TO PASTURING HOGS.

A writer in the Farmers Star urges the advisability of graining hogs in pasture. He says:

"Twenty-five years of pasturing of all ages on alfalfa has proven to me conclusively that a fourth to a half grain ration while they are on such pasture will produce greater growth per day when they are kept in dry lots and fed on full rations of corn. Hogs will maintain a reasonable growth, but not fatten enough for market on alfalfa pasture alone, therefore it is best to feed them some grain while running on green alfalfa in order to make them profitable.

"If it is desired to full-feed hogs they will make a rapid fattening growth from increasing the grain ration while they are on the pasture, and with this grain and alfalfa combination the meat will be nearly as firm as that of the hogs kept in the dry lot and fed nothing but grain. I find no distinction on the market between alfalfa-fed swine and those purely grain fed and they sell price and price alike. The general health of the alfalfa-fed hog is equal to that of those maintained on any other feed and they are prolific."

ROPY MILK.

There are various ideas afloat among men as to the cause of ropy milk. Farmers in general think it is due to some condition of the cow, inflammation in the udder or the like. But scientific investigations say, not so.

The germ that causes ropy milk, B lactis viscosus, finds its natural habitat in water. It will flourish in ice cold water but it grows with difficulty at blood heat, says Prof. Ward, which proves conclusively that it is not the result of disease in the cow. Starting with the proved fact that the disease originates in water, here are some of the causes as stated by Prof. Ward in his book, "Pure Milk and Public Health."

Cows wading in muddy sloughs and the germs falling from the body of the cow into the milk pail; foul stables, where this trouble exists; the organisms are found in the floor dust of milk room; infected water used for cooling milk in cans; the corrugated milk cooler may have a leak whereby the water is mixed with the milk.

The bad practice of merely rinsing the milk utensils at night in cold water and not scalding them out is another cause and a quite frequent cause of bad milk.—Hoard's Dairyman.

Anthrax Cure, Milk Fever Outfits. See O. J. Weber Co., 225-227-229-231 East Sixth street, Los Angeles.

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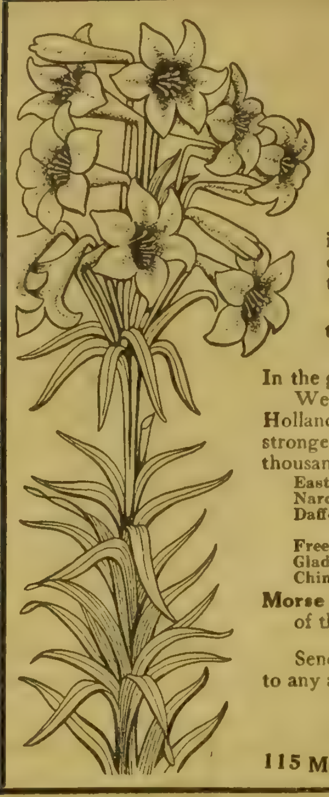

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Easter Lilies ....$1.50 per doz.
Narcissus, Paper White ....30c per doz., $1.75 per 100
Daffodils, Trumpet Major......35c " " 2.50 " "
By mail 12c per dozen extra.
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Wet your ground well and get it ready for Cabbage, Cauliflower and Onion seed-beds. We recommend our French grown **Winningstadt Cabbage, California Pearl Cauliflower** and **Early White Queen** and the **Bermuda Onions** as the best varieties for shipping and marketing.

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The Ornamental Garden

THIS MONTH.

This is bulb-planting month, and nearly all which have not gone into the ground should be planted before the end of the month. Especially plant Easter lilies, freesias, hyacinths, tulips, anemones, tritonia and Watsonias. Gladiolus bulbs which were taken out early in the season and are now dried off, may be planted also. Amaryllis may de divided and reset.

Shasta daisies may be reset, although they perhaps will do as well from later plantings. Pansy plants, lobelia, carnations, scarlet flax, stocks, and phlox, may all be set out at this time, although if the plants can not be had from the earlier planted seeds, the seed may be planted now. Sweet peas for early blossoming should be planted now.

The lawn will be benefited by the application of well-rotted manure, or better perhaps, commercial fertilizer which will carry no weed seed. This will help somewhat in preventing browning of the grass during the colder months. The next few months will be a good time to plant new lawns also. While the seed does not start quite so quickly as in the springtime, it gets a firm hold and makes a more perfect sward before the Bermuda becomes established.

AMERICAN FLOWER GARDEN.

"What is a garden? It is man's report of the earth at her best. It is earth emancipated from the commonplace. It is man's love of loveliness carried to excess—man's craving for the ideal grown to a fine lunacy. It is piquant wonderment; culminated beauty that, for all its telling and select items, can still contrive to look natural, debonair, native to its place."
—John D. Sedding.

How to produce "man's report of earth at her best" is the aim of the American Flower Garden by Neltje Blanhcan, published by Doubleday, Page & Co., N. Y. The price is five dollars, but it is an exquisite production. It touches upon the partnership between nature and art, practical garden work, formal gardening, old fashioned gardens, wild gardens, water gardens, trees, shrubs, perennials, annuals and so on to garden furniture. To give an idea of the practical every day suggestions it contains we quote:

"And since the first cost of the garden that is planted on naturalistic lines is the only cost beyond its easy maintenance, every cottager in this country, as in England, may hope to have his dooryard gay with hardy perennials, and a few shrubs and vines, at least; and oh, how sadly our working people's most unlovely homes need cheerful little gardens about them!

"Handkerchiefs, slippers and neckties are not the only useful Christmas presents. Why do we so rarely give trees, shrubs, bulbs, vines and perennial flowers to our friends? Many a large steamer that leaves the port of New York carries an enormous value of perishable cut flowers heaped up in its dining saloon, and these are often more of a nuisance than a pleasure to the voyagers. Do friends care any less for one another because they stay at home?

"One bride I know received a checque to cover the cost of making and planting a garden around her new home, and it is certain that all the cut glass and bric-a-brac she received will not give her a tithe of the pleasure during the rest of her life. For a wooden wedding present a young couple who had recently moved into a raw, new place, received two maples that taxed the capacity of the nearest nurseryman's big tree movers. Another couple give each other living Christmas trees every year. Their young daughter, when asked by her father to choose her own Christmas present, handed him a list of hardy hybrid tea roses. These could not be enjoyed except in her mind's eye until the following spring, it is true, but by that time she had studied how to care for them and now there is not a morning from June until frost when she cannot pick a bud for her father's buttonhole and roses for the library table."

The book can be supplied by the Cultivator business office.

GARDEN IN SHADE.

HERE are many places where shade makes it impossible to grow sun-loving plants. If this shade is a matter which cannot be got rid of we must either give the location over to grass or fill it up with such plants as flourish under the conditions which prevail there. There are many such plants—and some of them good ones—you will soon find out if you begin to investigate. Indeed, it is possible to make the shady garden quite as attractive as the sunny garden if one goes at it the right way.

Among cultivated plants the iris is one that succeeds well in the shade. So is the dicentra, with its long, curving racemes of drooping pink and white flowers. The lily of the valley does much better in shade than in sunshine. The aquilegias bloom well there, as do the hebaceous spireas.

Among the annuals that can be grown to advantage are nemophila, gypsophila and wild cucumber. With the latter most beautiful effects are secured by planting where it can clamber over bushes and trees to suit itself, if you want it to do itself justice.

But the most beautiful of all plants for the shady garden are found among the fields and forests. Here trilliums and bloodroot and erythroniums and hepaticas can be made to grow quite as satisfactorily as in their native haunts if you will furnish them some of the soil of the woods to grow in. This they must have or they will refuse to become domesticated. Here thalictrum, better known as meadow rue, and one of our most beautiful plants, with foliage almost as fine as that of a fern, and flowers dainty and delicate enough for a fairy garden will grow into great clumps, and furnish you with material for most charming decorations of table or parlor. Blue and white and yellow violets will increase in quantity year by year, and Solomon's seal will grow and spread until you have to restrict it to certain limits.

Here is the place for a collection of ferns. You may have one that will be a constant source of delight to you with little trouble. First of all, a trip to the woods for earth in which to plant them. Remove some of the old soil and put the woods earth in its place. Then go in search of plants with which to fill it. Take with you a large basket and a trowel to dig your plants with. Do not take the plants, as you will be tempted to do, thinking that they will produce an immediate effect. Most of them have such large roots that you cannot lift them without seriously disturbing them, and root disturbance means the loss of nearly every developed frond. Be satisfied with the little plants whose roots are so small that you can lift them in your basket, and keep the soil about them moist by frequent sprinkling.

Ferns adapt themselves to new conditons much more readily than most persons imagine. While it is important that the native soil should be used with them at first they soon become so much at home in their new quarters that they reach out their roots beyond the soil you have provided for them and take possession of the ordinary soil.

The foliage of domesticated ferns lasts considerably longer, when cut than that of the fern growing in its wild state. It is probably accounted for by the fact that the domesticate plants are, as a general thing, more fully exposed to the action of the air and wind than those in more sheltered places, also by the lack of moisture in the air, which is always excessive in woodland places.—Ruth Ericson in Coleman's Rural.

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For Cover Crop

Carload just in. Write for sample and price, stating quantity wanted.

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Charges for Soil Work

(Temporary)	PER SAMPLE
Mechanical Analysis (five grades of fineness)	$1.00
Lime and Magnesia Determinations (available)	1.00
All the above with Phosphoric Acid, Chlorine, Alkalinity, and approximate Humus	4.00
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SAMPLES—Take surface sample from first foot: subsoil from between 2½ and 3½ feet depth; deep subsoil from between 7 and 8 feet depth. One pound is enough for a sample if well mixed before dividing down. PRICES—These prices are in force only while advertised.

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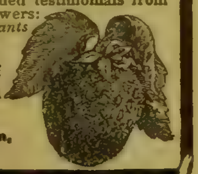

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Strawberry plants for fall planting. Ten varieties best adapted to Pacific Coast conditions.

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Garden and Field Crops

THIS MONTH.

Plant peas, bush beans, beets, carrots, cabbage, lettuce, radishes, parsley, onion sets and rhubarb roots. It must be borne in mind that the subsoil is thoroughly dried after the months of drouth, and heavy irrigation should precede any planting. The indifferent watering of ground is the cause of many failures in garden work. The loss is in two directions. The sun is yet high enough to take much from the surface and the attendant loss in the dry layers below requires a good supply of moisture for the seed so that the young shoots will reach through the surface soil. It is because of indifferent watering before planting that irrigation is necessary to bring the seed through the soil and the surface crusts over.

There are a few sections in the state where tomatoes may be transplanted this month. It is probably too late to plant the seed, but with care the vines will give holiday fruit. Some sections have succeeded in planting chiles and bell peppers at this time.

Portions of the garden not being used should be cleaned of all vines, leaves and rubbish, which may be burned, or if desired for composting, be sure to use in orchard or on other crops and not again in the same garden. The weeds and left-over vines from former garden work may carry with them fungous and insect troubles which will cause serious loss. A good deep ploughing which will put the ground in condition for receiving the early fall rains will prove profitable.

THE VITALITY OF POTATOES.

Is it a fact that potatoes must be bred from time to time by a man who understands the art in order that they may not run out? This is one of the disputed questions among those who have given the subject study. First, potatoes as usually grown are really cuttings; that is, they are grown from other potatoes planted whole or by cutting down to one or two eyes. They may even be grown from potato peelings that contain an eye or bud. Therefore they come under the general law of all cuttings, and it is a well-known fact, established by long experience, that fruit grown from buds or cuttings has less vitality than when reproduced from seedlings—that is, grown from seeds.

Varieties of potatoes originate from the seeds found in the balls on some varieties of potatoes in some seasons. Here again the analogy holds good. If we grow trees from the seeds of the apple, the stones of the peach or plum, we may have a wonderful variation of fruit from the same apple or pits from the same tree. The work of establishing a new variety of potatoes involves the gathering of a large number of these potato balls, washing out the seeds, planting them, cultivating them, until the quality of the tubers growing therefrom may be ascertained. Possibly one of a thousand may be worthy of further cultivation. These are cultivated until the proper size is developed, and when a really choice variety is secured in this way, it can be depended upon to reproduce itself from the potatoes for an indefinite number of years. We say indefinite, because much then depends on the cultivation, and especially upon the careful selection, of seed and subsequent cultivation, particularly if grown in a country not especially well calculated to develop the potato to its best.

Here again it sometimes happens, as in the case of the world-renowned Scotch and English varieties which Grubb recently brought over, that a potato that yields the most and is the hardiest is not by any means of the best quality. There seems to be a lack of hardiness in many of the really finest types of fruit and vegetables. Hardiness—in other words, the extreme vigor of stock, tree or vine—does not always, nor in fact generally, go with the highest quality. When a man gets hold of a really fine variety of potatoes he should under no circumstances plant small seed, or that for which there is no market; nor should he plant the extremely large seed. Extremes of size either one way or the other should be avoided in the selection of all kinds of corn, for example, or in selecting breeding stock for the farm.

A good variety of potatoes may be made to last a great deal longer if the farmer in selecting a few potatoes for seed will go through his field and select those hills or rows most resistant to fungous diseases, whether on plant or fruit. Fungous diseases take hold of the weaklings. They are to potatoes what lice are to livestock, always abundant on those less able to resist their attacks. When a potato begins to weaken fungous diseases of various kinds take hold of it, just as smut and rust do on a variety of grain that is running out—in other words, losing vitality.—Field and Farm.

THE SOY BEAN.

There is a wonderful increase of interest in the soy bean, both in this country and Europe. It is one of the staple products of Eastern Asia and especially of Manchuria, where it is used as food for man and beast and is pressed for oil, which makes a residue of bean cake, for which Manchurian merchants are making energetic efforts to find markets. Consul H. L. Washington of Liverpool, England, writes:

"The first complete cargo of soy beans that arrived in the United Kingdom reached Liverpool February 14, 1909, and the interest in this new industry has grown apace since then, experiments being made in various other parts of England as well as Liverpool that range from a blend of soya flour, made by an expert Liverpool baker with flour and with meal, about one-fifth for mixing with flour and one-sixth for meal, to a soya dog biscuit.

"The blending of soy flour above referred to is desirable by reason of its demonstrated food value. In albuminoids soya beans are stated to be nearly three times as rich as oats and wheat and possessed of more fiber and ash. A few German millers are reported to have mixed soya and rye flour in experiments in the making of a black bread of that country, and local millers here are experimenting with a blend to improve brown bread.

"A vegetable cheese is known to be produced from the casein that the bean contains, but this has not advanced from the experimental to the commercial stage.

"It is reported that one or two important Liverpool merchants have sent their own investigators to Manchuria to study the products of that country, chiefly the soya bean. It is also stated that one of the large shipowners of Liverpool contemplates the introduction of the soya bean into West Africa, where soil and labor conditions are thought to be peculiarly favorable to the growth of good crops. This enterprise is cited as a parallel to the British cotton growing movement at its inception, and some measure of the same success is confidently predicted for it.—S. F. Chronicle.

THE TOMATO IN THE IMPERIAL VALLEY.

From the Brawley News we learn that winter tomato culture is not without its attractions in that region. The long extended growing season is not only especially adapted for the successful maturing of ripe tomatoes for the late fall and holiday trade, but here we are, situated within eight hours travel of the greatest tourist city in America. Los Angeles has more first-class hotels than any other city double her population in the United States. These hotels, the great majority of which cater only to those "after the manner born," require daily, tons and tons of green garden produce, for which they are willing to pay fancy prices.

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The Song of the Apple

This week the Pajaro Valley is certainly in the spot light with its Watsonville apple show, full particulars of which The Cultivator presents elsewhere direct from its own correspondent on the ground. Nothing that has ever been attempted in a deciduous fruit exhibition can equal the magnitude and beauty of this effort, the entire display staging no less than 25 carloads of fruit, nearly all of which is high-grade. The only negative note in the song of the apple is here and there a want of careful selection and perfect packing—imperfect specimens carelessly handled often marring what would otherwise have been an exhibit almost faultless. On the whole, however, it is an effort that the California fruit interests can be proud of, and no division more so than the apple growers.

And well it may be so, for the apple finds nowhere else a climate and soil more to its liking, nor nowhere else has intensive apple growing and handling reached a higher state of perfection. The production and marketing of this fruit has come to be a business of large proportions. Today the Pajaro Valley produces and ships out more apples than any other single district in the world. The shipments of apples and their by-products for the season of 1909 aggregated more than 4000 carloads or 2,550,000 boxes, and the acreage and production are yearly increasing. These apples were produced from less than 12,000 acres of orchards, and brought into the locality approximately $2,000,000 of outside money. In the face of these facts, it seems an idle waste of time to worry over adverse criticism from outside sources, even though it emanate from so high an authority as the snake editor of The Portland Oregonian.

Broaden Out

Referring further to the suggestion that an appeal should be made to the Department at Washington for assistance in solving the complicated problems confronting the soil culturist, we feel that the resolution committee failed to accomplish as much as it might. It was proposed in the convention that not only should the State University be most heartily commended for work already done, but it should be urged to greater effort along the same lines, and that, in addition, the Department of Agriculture at Washington should be invited to join more fully in the investigations. This latter was dropped by the resolution committee because it was suggested that it might not be "courtesy to the State University and its excellent corps of professors to bring into this convention any request for national aid." It may be that our State University can answer this question fully and completely and that the action of the committee in refusing to request federal aid is entirely justified, but we do not believe the staff of the State University would have considered such a suggestion in any way indelicate. We fail to see where in any sense there would be reflection on the University or any members of its staff by urging the bringing to California of every possible means of solving soil problems. Their magnitude precludes any possible completion of the investigation for many years, and the more light thrown upon them by the skilled people of the country, the quicker will prosperity come to the farmer and the more liberal will be the appropriations to the State University.

The campaign against ground squirrels is receiving impetus through the attitude of the State Board of Health in pressing for their destruction, but in any case their extermination should be energetically and persistently taken up. They are one of the worst of pests from the agricultural standpoint, but from the point of the saving of human life there is no computation of the damage which may come from permitting the ground squirrels to live.

Difficult Problems

Dr. King, in one of his lectures during last week's soil convention in Los Angeles, forcefully remarked that Californians are confronted by vastly more difficult problems in the maintenance of soil fertility than are Eastern farmers. Especially is this true of the orchardist who has to maintain fertility of the soil, yet during most of the year practices clean cultivation. This calls for careful study, and we claim to have farmers of a higher grade of intelligence than are engaged in agriculture in the East. We do not think any convention touching upon agricultural topics ever called together a brighter class of people than were convened last week in Los Angeles or will convene this week at Davis on the University Farm. But regardless of the class of people engaged in cultural practice, the requirements of knowledge in soil chemistry, soil physics, and soil bacteriology, have become so great that only the trained specialist can solve the problems.

Hence the work which the Univercity is accomplishing in its agricultural experiment stations should be encouraged. Further, we believe an appeal should be made to the Department at Washington. The time was when there was some petty jealousy as to who should take up the different lines of work in aid of agriculture, but with the magnitude of the problems pressing more and more we believe that spirit is disappearing; it is recognized by all that too much help cannot be secured.

Complaint has been made that some sections of the state have received from the Department at Washington more than their just share of expert service in solving such problems as that of shipping fruit. But true it is that those who ask shall receive. Neither is this altogether due to persistence in asking. The asking itself is proof to those in charge of such investigations that the people asking aid are ripe to put into practice the lessons taught by the investigations. This was never more emphatically shown than in the orange and grape shipping investigations. Both citrus and grape growers were keen to take advantage of the information secured, and millions of dollars have been added to the wealth of the country because of acting upon the expert advice given.

Troops for Forest Protection

The fearful loss from forest fires which the West has suffered this past season is calling attention to the possibilities of preventing its recurrence.. The loss this season has been sufficient to have provided a system of protection costing into the millions. However, it has been suggested that this could be done at practically no additional expense by transferring the regular troops of the army to forested sections during the danger months of the year.

California organizations which have to do with conservation of our natural resources have joined in the movement to secure this aid, requesting that the troops be placed under the direction of the Department of the Interior, or any other department for that matter, and assigned to duty from May to September. Such a step, we believe, would be most beneficial not only to those directly interested in the timber industry, but to water users, and, in fact, to everyone.

The troops were of great service during the terrible fires which swept the Northwest, but unfortunately were transferred to the field altogether too late. The time to stop the ravages of fire, as has been learned in every city of the United States, is at its inception. After it has once passed beyond control an entire army is insufficient to cope with it.

The Tulare Farmers' Union has inaugurated a scheme for providing the community with a packing house on the co-operative plan. It is believed that this is an opportune time for the movement, and there can be no question that a packing house would be a good thing for Tulare.

Believe in Yourself

Mr. Gerald Geraldson of Newcastle, Placer county, came 600 miles to attend the soil convention held in Los Angeles this week. Geraldson has a hobby. Unfortunately, he finds but few who agree with him, but one thing made emphatic during the convention, as also in the columns of former Cultivators, is the fact that Geraldson believes in himself and his theory. Sure it is he makes a good showing with his photographs and commendations from those who have seen his orchard in its former condition and under his present method of soil conservation. In a word, his theory is that nature is sufficient to restore its own equilibrium, and that if handled intelligently the soil will maintain its virgin fertility without adding fertilizer from without. He is not a believer in green manuring but does believe in allowing the natural growth to occupy the soil and to fully ripen and seed the ground for after years. This growth is not only allowed to stand during the wet season, but in each alternate row is allowed to stand during the entire summer. The next wet season finds it still occupying the ground, though somewhat mashed down, and through this mulch grows another crop of weeds. These, however, are plowed under the coming spring with the old dried growth, and the other rows which were given clean culture the last summer are left in their turn to be covered with the natural growth. This plan Mr. Geraldson has followed for nine years on 75 acres of figs, pears, and other fruits. The first four or five years he says he was somewhat uncertain as to results, but now he has increased the tree growth from four or five inches annually to four or five feet.

One great objection to Mr. Geraldson's method is that it takes lots of nerve for the orchardist on high-priced ground with high-priced trees to take it up, and we think in Southern California but few will try it. We understand many in Placer county, influenced by Mr. Geraldson's enthusiasm, are following his example.

Conserve the Water

The suggestion was made by Dr. King in the Soil Convention in Los Angeles last week that the storm waters of California streams be diverted from their courses at flood time to as great an extent as possible and poured upon the open, porous soils and gravel beds. As he said, if this great waste, which far exceeds the water used in the state, could be put into the lower strata of gravel to be later drawn or pumped out, it would mean a vast increase of the producing power of the state. This plan has been followed in some sections of Riverside, San Bernardino and Los Angeles counties. A great increase in the Santa Ana river especially has been secured by this diversion of winter water into the gravel beds. The domestic water system of the city of Pomona also has been largely increased by diverting the waters of San Antonio creek to the great stretches of gravel beds below the mouth of San Antonio canyon. These successes should be sufficient to encourage adoption of similar methods with other streams.

Boys for Foresters

Some of the towns of this state have organized boys into tree planting clubs. This movement is succeeding wonderfully in creating interest in trees, their planting, and the benefits accruing. Later a movement was started to interest boys in the native and other forest trees, in protection of the forests from fire, in spreading better ideas as to the necessity for the conservation of the trees and brush over our watersheds. Every step which may should be taken to encourage the youngsters in this movement.

This movement is encouraged by Gifford Pinchot and practically everyone interested in conservation. The eligible age is from twelve to twenty years, and farmer boys especially are urged to join in the formation of these clubs.

Agricultural News Notes of the Pacific Coast

Northern California

H. Hawes, of Molino, harvested 30 tons of Gravenstein apples from 155 15-year old trees. The returns were $777. His orchard is one of the best in that section.

The crop of broom corn along Butte Slough and the Sacramento river this season is larger than usual and the price is also good, being in the neighborhood of $200 per ton.

Seventy students are enrolled at the State farm at Davis. They hail from all parts of California and even some from Mexico. It is expected that 100 students will be registered before the lists are closed.

The Gridley Gun Club and others are interesting members in an endeavor to have their preserves stocked with Hungarian pheasants; the Game Commission has been asked to furnish several hundred birds.

The apple crop in the Oak Glenn district will amount to about 1,000 tons. The crop is composed mostly of Winesaps and Rome Beautys and will be handled by Rivers Bros. and other Los Angeles firms.

B. Sartori, who leased 600 acres of the Jackson bottom land below Yuba City recently received two carloads of milch cows, besides cream separators and other machinery for the big dairy he is establishing.

Twenty-two horses were burned to death recently in a fire that destroyed the Gridley Livery Stables, together with all its contents. The fire loss amounts to about $15,000, on which a considerable insurance was carried.

The beet sugar factory at Alvarado is running full blast and will have one of the largest outputs in years. Woodland and Pleasanton are shipping immense quantities of beets, the consignment at the mill reaching twenty cars a day.

Restrictive regulations on the part of the government of France affecting the products of dried fruit producers of California have been modified, according to information furnished the State Department by Robert Bacon, American ambassador at Paris.

Z. Cornelius, of Placer county, claims that he has broken the record in the matter of growing long pumpkin vines. One pumpkin vine on his farm measures over eighty feet and he predicts that it will reach the one-hundred-foot mark before it finishes growing.

Most of the wineries in Sonoma county are running full blast, crushing grapes. At the I. DeTurk winery in Santa Rosa Zinfandels are being crushed. The Fulton winery has contracted for 4000 tons of grapes and the Forestville winery has contracted for 3800 tons.

Plans and work are now under way whereby the State Game Farm at Haywards is being enlarged so as to double the capacity next season. Concrete fountains are being placed all through the pens, making the conditions for the raising of the birds more sanitary.

The harvesting and drying of Thompson Seedless grapes in the Sutter section is still progressing and it will be at least two or three weeks before the same is completed. The yield will be about 1600 tons. It is reported that about 700 tons of raisins have already been sold at 4 cents to 5 cents per pound.

At Live Oak, under the direction of A. W. Cutts of the local Almond Growers' Association, the almonds of the members of the Association are being bleached in the warehouse, and instead of the nuts being sprayed with water before being put in the bleachers, hot steam is forced into the bleachers where the sulphur is burning and the almonds are given a uniform bleach, and are then ready for immediate sacking.

Central California

According to the terms of a will left fifteen years ago by George Hicks Fancher, a wealthy pioneer of Merced county, a granite shaft to stand 68 feet in height will be placed over his grave on the Bear Creek ranch ten miles from that town.

At a meeting of the directors of the Tulare County Citrus Fruit Exchange, the following officers were chosen for the coming year: J. A. Milligan, president; J. J. Cairns, vice-president; W. E. Sprott, secretary; First National Bank of Porterville, depositary.

The central California orange season is at least six weeks earlier than usual and already the fruit is ripening and showing good color. Navels will be colored up by October 15, but it is not known whether any of the packers will begin to ship at that time. The crop will be about 25 per cent. larger than last year.

O. L. Flynn, real estate man of Strathmore, reports the sale of au eighty acre tract of land just west of that town to Assemblyman Cogswell. Forty acres of the land were formerly the property of O. L. Thomas of Los Angeles. The new owner plans to plant out the tract during the coming planting season.

Twenty-five fine wild turkeys were received at Porterville, September 23, from the state game commission's farm at Hayward. Members of the Fish and Game Association have been very successful in the propagation of Chinese pheasants and Hungarian partridges and for that reason they were selected to look after the turkeys.

An interesting visitor at the late Soil Convention in Los Angeles was W. S. Guilford of Willows, Director of Agriculture for the Sacramento Valley Irrigation Co., also known as the "Kuhn Project" or "The Pittsburg Syndicate." Mr. Guilford is a graduate from the Wisconsin Agricultural College and was much pleased to meet in one of the lecturers, Dr. King, one of his old teachers.

"Here lies the body of M. Theodore Kearney, a visionary, who thought he could teach the average farmer, and particularly raisin growers, some of the rudiments of sound business management. For eight years he worked strenuously at his task, and at the end of that time he was no further than at the beginning. The effort killed him." The late Mr. Kearney wrote this epitaph for himself.

The Turlock Grape Juice Company will put up very close to sixty thousand gallons of grape juice this year, the greater portion of which has already been sold in the east. Turlock grape juice is in great demand, not only on this coast, but in the eastern states. It is of the very finest flavor and quality, as nothing but the very finest quality of grapes are used in the manufacture of same.

Four thousand acres of land near Clovis, formerly owned by J. D. Collins and Mrs. G. D. McLaughlin, have been sold to a party of Eastern capitalists for a consideration said to be $250,000. The new purchasers are already making extensive arrangements to put the land in attractive condition for settlement. A thorough ditch system will be installed and avenues laid out, bordered with trees.

The high price of wheat during the past two years has given an impetus to grain planting in the state. An instance of this is given in the case of Charles Moreing and Lloyd Wood who farmed 13,000 acres in San Joaquin county. They are now harvesting with five traction engine outfits and the barley is averaging from 30 to 35 sacks to the acre. They will reap in the neighborhood of 369,000 sacks, which, at current prices, should bring about $390,000.

Southern California

The price of tomatoes at Fullerton in carload lots has declined from $18 to $12 a ton. Ten cars were shipped East the week of October 3.

The Santa Barbara Press says that the Lompoc valley mustard-growers have organized an association for the purpose of fixing prices and handling the trade in this product.

The San Diego Floral Association will hold their flower show on October 17-18 and claim it will be the finest and fullest exhibit of plants and flowers ever held on the Pacific Coast.

The first shipment of Imperial Valley cotton to Japan is on its way. H. Nose, representative of the great Japanese cotton manufacturing concern, Gosho-Goshi-Kaisha, purchased fifty bales.

Earl Bros. of Chicago have been sued in the Municipal Court by the California Produce Co. for $5,000, for alleged failure to pay for several shipments of fruit. The California Produce Co. is a growers' co-operative organization at Pomona.

In the cotton crop report for September, California again leads the entire country with cotton—90 per cent of the normal, as compared with 65.9 per cent for the entire country and 78 per cent for Virginia, which ranks next highest, leaving California far ahead of its nearest competitor.

On September 30 an official of the U. S. Weather Bureau from Los Angeles auctioned off the property of the Government at Salt Creek Bridge on the Salton Sea. The Government has completed its gathering of data and has abandoned its evaporation station.

An addition of fully 2000 high-grade milk cows to the dairy herds of Imperial Valley during the past twelve months is the estimate of F. L. Davis, of the firm of Crawford & Davis. This firm has handled more dairy stock in Imperial Valley than any other concern, and has kept close tab on the development of the dairy business during the past season.

The packing house of the Pachappa Orange Growers' Association of Riverside was destroyed by fire October 1. The loss to the association is estimated at approximately $8000 representing packing machinery, about 1000 fruit boxes, and quantities of wrapping paper and like supplies. This amount, however, is practically covered by insurance.

The shipments in carload lots from the Fullerton district during the week of September 24 were as follows: Fullerton-Placentia Association, three cars oranges; Chapman Packing house, two cars oranges; California Vegetable Union, seven cars tomatoes; Pacific Vegetable Company, three cars tomatoes; M. N. Cobb, two cars tomatoes; Stern & Goodman, one car beans.

Seedling date palms on the California Date Company's farm near Heber are in bearing this year at the age of five years, averaging from thirty to forty pounds to the tree. The dates generally are of good quality and marketable, although they are nameless. The seeds from which the trees were grown were Deglet Noor, but the fruit does not resemble the Deglet Noor any more than a seedling orange resembles a Valencia.

The deal for the sale of the Cabazon ranch property in the Coachella, of R. F. Garner has been closed, says the San Bernardino Sun. The purchasers are the Malone Land and Water Company and the purchase price is understood to be about $50,000. The men who compose the purchasing company are: T. E. Nelson of St. Paul, S. A. Rothermal of Chicago, J. B. Frost of Denver, C. P. Dorland of Monrovia and W. L. Malone and E. M. Larson of Los Angeles.

The Coast

L. G. Seaton has been secured by the Walla Walla (Wash.) commercial club to secure apples and pack them for exhibition at the Spokane apple show and also for the show at Chicago.

William Lee, Jr., who has a vineyard within the limits of North Yakima, was the winner of first prize on a general grape display at the Washington state fair, taking the blue ribbon on 35 varieties.

Homer and Schuyler Armstrong of Cora, Montana, who have been in the sheep business for many years, are now turning their attention to scientific farming and will sow about 300 acres to winter wheat.

Growing thoroughbred apple trees, to be registered the same as live stock, is a new idea which is spreading in eastern Washington. H. M. Litchy of the Yakima-Sunnyside district is the father of the plan.

Mr. F. P. Cooke of Phoenix, has accepted the position of editor on The Southwestern Stockman. Mr. Cooke, originally from Michigan, lived for twenty years in California, but for the past two years has made his home in Arizona.

The Okanogan Valley (Wash.) Fruitgrowers' association has been organized with these officers: President, B. L. Smith; vice-president, S. S. Bunn; secretary-treasurer, J. C. Gay; directors, I. W. Smith and S. G. Duley, and the executive officials.

A report to the Forestry Department from rangers who have estimated the burned area along Independence creek on the north fork of the Coeur d'Alene in Idaho states that the amount of timber left is of much greater area than first reports indicated.

William Scheble claims to have the champion Bartlett pear tree in Oregon. It is 42 years old and has borne thirty-seven consecutive crops. The tree is twenty-two inches in diameter, has a spread of fifty feet and is forty-five feet high. It is situated near the town of Ashland.

The Columbia Valley Fruit Company of Trinidad, Wash, has had surveyors at work on land on the west bar for a week locating flumes and a reservoir site. The company has cross-cut the mouth of Tkyson canyon for bedrock and if found practicable will put in a cement dam.

The Rogue River Fruit Association in Medford, Oregon, has opened a school for the purpose of teaching the experienced as well as beginniers to pack the new regulation box which is two inches shorter, one-half inch deeper and one-half inch wider than the old box.

As a result of irrigation investigations in the Willamette Valley, A. P. Stover reports that farmers must abandon old methods, have smaller farms, rotation of crops and intensive culture, if local markets are to be supplied at reasonable prices. Irrigation must also be practiced.

The highest price ever paid for state lands in Nez Perce conuty, Idaho, was secured at the sale of endowment lands held by State Land Commissioner Day and State Land Agent Wallace, Lewiston, and nearly every tract sold exceeded the estimate of the state appraisers. The price averaged $40 per acre.

It is costing farmers of Columbia county, Wash., approximately $25,000 a month to hold grain now stored in the warehouses at Turner. Alto, Menoken, Starbuck, Whetstone, Longs, Huntsville and Dayton, according to a local buyer. It is estimated the amount of grain stored totals 2,500,000 bushels. Of this amount 80 per cent, or 2,000,000 bushels, is still in the hands of the producers.

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If you were going to erect a large building, you would consult an architect—if you wanted some legal papers drawn up, you would go to a lawyer—because these men have made a special study of their respective professions.

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Of the black breeds and varieties of poultry, the Black Minorca easily occupies first place on the Pacific Coast. The reasons for this popularity are not far to seek. Belonging to the Mediterranean class, in habits and characteristics it has much in common with the White Leghorn, the line of cleavage being that it is a larger bird, and that it lays the largest egg of all our domesticated varieties. Like all its associates in the Mediterranean class, the Minorcas are egg-producers of the purest ray serene. If hen fruit were sold by weight instead of by the dozen, the breed would stand first for eggs, even as it is, many give it preference over the smaller Leghorns. Of late crosses between Minorcas and Leghorns have been resorted to for egg-production, it being claimed that the Minorca blood tends to an increase of size in egg, while the Leghorn increased the number produced. These advantages would not, however, go much beyond the first generation of the cross.

The illustration shown herewith pictures to the life the American type of the breed, when bred at its best. For symmetry of form, graceful carriage, and majestic appearance the bird is certainly an attractive object, —and what is more, the bird shown is a California product.

STANDARD BRED BLACK MINORCA COCK

EGG PRODUCTION.

W. R. Graham, the poultry expert, in his animal report of the Ontario (Canada) Agricultural experiment Farm, gives some interesting observations of the open air houses, covering a period of five years:

The difference in the percentage of egg production in favor of the cold or fresh-air house during five years for the months of December, January, February and March, beginning December, 1904, was found to be for 1905, 76 per cent; 1906, 8 per cent; 1907, 11.8 per cent; 1908, 15.6 per cent; and 1909, 12.4 per cent.

The egg production of early and late hatched pullets was compared. Between November 1 and July 1, April-hatched pullets averaged 77 eggs each and June-hatched pullets, 48 each. The cost of feeding 25 pullets and 2 males for 1 year, beginning November 1, was $29.64. The number of eggs laid was 3,053, valued at 62.34. Five hens, rated at 50 cents each, died during the period, making the profit $30.20. Each bird consumed 19.64 cents worth of animal food and 55.5 lbs. of grain valued at 94.12 cts.

With chicks hatched early in May and kept in a pasture, 345 consumed 4,304 lbs. of grain. The cockerels were removed when they weighed about 3½ lbs. each, and the breeding stock was taken from the pasture October 22. With other chicks reared in an orchard, 773 consumed 8,649 lbs. of grain. These were hatched and taken out at different times. These figures indicate that a 4-lb. cockerel can be raised on from 13 to 14 lbs. of grain worth about 21 cents. Other data showed that it cost from 5 to 7 cents to hatch the chicks.

AN IRISH EGG RECORD.

The Department of Agriculture and Technical Iinstitute of Ireland has completed an interesting egg-laying experiment covering 1908-09, the particulars of which have only recently been published. The general average for all flocks recorded was little more than 109 eggs per bird per year. One flock of Barred Plymouth Rocks laid an average of 187 eggs per bird per annum, but this was the only flock giving more than 180 eggs. White Leghorns gave a general average of 128.5 eggs per bird, with the average of the best flock of the breed 176.8, and the lowest flock 85. The Plymouth Rocks had the comparatively poor general average of 93.3. The only pen of Houdans for which complete returns were made showed the high average of 153.9 eggs per bird.

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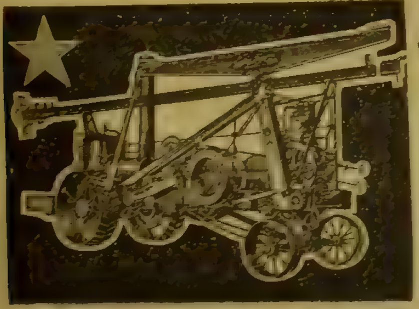

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THE DANGER SIGNS.

In poultry culture, as with the human race, preventive measures against disease are better than cures. Chief among these are wholesome food and intelligent management, good sanitation in both houses and yards, pure water, and a plentiful supply of grit. If these elements are always in evidence the flock is quite apt to be healthy and profitable. A sick fowl patient is at best only a worry of the mind and an irritant of the pocketbook, and though in mild cases cures are often efficacious, it has always seemed to the writer that the only really good sick fowl he ever saw was a dead one. Often, if one is reasonably familiar with the habits and characteristics of fowls, ailing in its incipiency can be detected, and conditions so changed that no resort to pellets and pills will be necessary. Some of the danger signs of Biddy's going wrong may be enumerated not without interest to our poultry readers:

Most diseases of poultry take their inception from an ordinary cold, which if not checked, soon leads to more serious trouble. It usually makes its presence pronounced by sneezing, watering at the eyes, and a puffed appearance of the face. If it is accompanied by a rattling noise in the throat, it is an advanced cold accompanied with bronchitis; or it may develop canker in the mouth and throat, in which case it may be diagnosed as diphtheritic roup; if the fowl breathes with difficulty it has developed pneumonia; and finally, if the discharges of the nostrils are ill-smelling it has degenerated into common roup, which may also show hard lumps under the skin of the face. It will be noticed that all of these troubles take their inception in a mere cold, which may often be prevented by feeding onions liberally and red peppers chopped up fine in the mash. When specific remedies are to be applied give aconite in the drinking water, a dozen homeopathic pellets to a quart of water; another good remedy is equal parts cayenne pepper, ginger and mustard, mixed stiffly with lard, then flour, form into pellets about the size of a hazel nut; give by opening the mouth and dropping down the throat. Repeat if one treatment fails to effect a cure. When a cold has been allowed to degenerate into roup it is our conviction that the best thing is the hatchet. Seggregate the ailing birds from the healthy, and then kill and bury deep the afflicted. Many of the roup remedies that are on the market are not without their virtues, and to those who are so disposed, their use can be commended.

Looseness of the bowels, vent smeared and gummed, usually spells diarrhoea; if the discharges are bloody it is either dysentery or enteritis; greenish discharges are symptoms of cholera.

Diarrhoea is usually the result of bad conditions—such as filthy quarters, tainted food, impure water, etc. Altered conditions and wholesome feeding will often restore normal good health. It can be checked by feeding dry feed and giving boiled milk to drink. Dysentery or aggravated diarrhoea is invariably fatal, and taking one case with another, is hardly worth bothering with. Hence weed out the ailing birds and destroy them. The same remarks apply to cholera.

Ruffled plumage, droopiness, purple comb, with dark watery discharges at the eyes, shows evidence of liver congestion; when the discharges turn yellow it is inflammation of that organ. Liver troubles can usually be traced to overfeeding. Use a good liver pill and correct wrong conditions, and relief will follow; when once inflammation has set in cure is almost impossible.

The presence of chicken pox is usually indicated by ulcers about the head and face. Wash with carbolic soapsuds and anoint with fresh lard or vaseline.

General debility and mopishness indicates indigestion, due to over-feeding. Alter your system, see that the condition and environment is pure and healthy, and the head will soon be normal.

Lameness may be the result of an accident or rheumatism; usually produced by cold and damp quarters. Alter conditions.

As a preventive measure charcoal is a good thing to have about. It prevents disease by absorbing the gases in the system and also by its cleansing mechanical action. Birds having access to it will eat quite freely.

Common hard soap dissolved in water to the consistency of soft soap, one teaspoon to the gallon of water will clean the nostrils and throat and act as a mild purgative.

Epsom salts is a good and simple drug for maintaining health. Give about a teaspoonful to each twelve hens once a week. Dissolve the salts in just enough water to take them up. Then employ this liquid in mixing the mash, making it dry and working over and over. Give for half a feed. In this way the birds all get a share. Salts cool the blood, clean the intestines and stimulate the action of the liver and other excretory organs.

Peroxide of hydrogen is another cleansing agent and a destroyer of disease germs that can be used to advantage externally in case of wounds, sores, etc.

Disease, as has already been said, is invariably the result of wrong conditions. Normally, chickens are healthy. Intelligent care-taking, wholesome feeding, and good sanitation are worth more than all the preventives and cures that man has devised. Are you and your birds in close touch with all three?

NO PLACE FOR DRUDGERY.

The poultry yard work should not be a place of drudgery and will not be if arranged with an eye to comfort when being built. On the contrary, it will be a pleasure to do many things that need to be done daily—such as watering, feeding and cleaning the house.

The food troughs should be arranged so as to be easily cleaned, and the dropping boards made so that a minute's work with the shovel or hoe will take off every particle of filth.

The house need not be an expensive one in order to have it this way; but one built of cheap material will be just as good, provided the roof is water proof and the sides free of draughts.

The fowls should never be allowed to sleep in trees or in barn lofts. One reason why so many farmers dislike poultry is that it is allowed to make itself a nuisance around the barn. Hens do not go to the barn or treetops through choice. They are usually driven there by the neglect of the owner, in not providing a good, clean house for them. If you expect your hens to lay during winter you must look after their wants.

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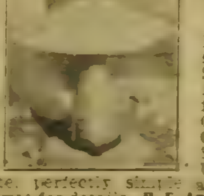

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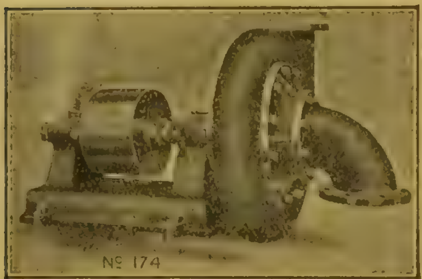

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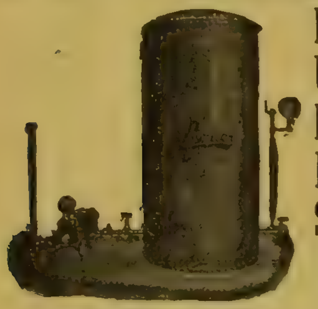

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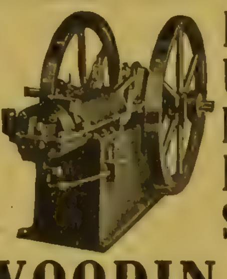

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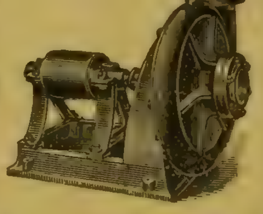

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Irrigation and Forestry

MARGINATA.

As I have noticed recently statements in The Cultivator asserting that this unrivalled species does not flourish very well in California, it has occurred to me that there must be a reason for this non-success. It may be that the planting has been done in unsuitable soils and localities.

Before dealing with this aspect of the question it may be as well to consider the tree in its native habitat in Western Australia. According to the great authority on eucalyptus, the late Baron von Mueller, it is found from "King George's Sound to Cape Leeuwin and the Moore River, forming the principal forests in Southwestern Australia and occupying a region not far removed from the coast. The Jarrah in its humid native region seems more indifferent to soil and situations than most other eucalyptus, but it avoids hot and dry tracts of country. I saw it descend (in a stunted form) on sandy ridges and calcareous declivities close to the sea shores, and traced it, as a shrub, to the rocky summits of the Sterling's Range (nearly 3000 feet high). But its development for extensive timber forests takes place on the ranges of older rocks well within the influence of the sea air, as shown on the forest map issued by the Hon. Malcolm Fraser, Minister of the Lands Department of Western Australia. Throughout nearly the whole region of its range the Jarrah is largely mixed with Calophylla (the Southwest Australian Red Gum or Bloodwood Tree). Marginata is not a tree of rapid growth and therefore not one of early regeneration either. The choicest timber is obtained from the slopes of the granite and ironstone ranges which are within the influence of the prevailing moist southwestern summer winds." Baron von Mueller also expressed an opinion that the development of the Jarrah would be more rapid in moderately elevated mountains than in flat country.

Mr. Blair, superintendent of the Yan Yangs forest plantations at Lara, Victoria, planted some Jarrah there seventeen years ago. He informs me that some of the trees are doing remarkably well. He thinks they should be put in about ten feet apart and thinned out subsequently to twenty feet, as they are a bold, strong growing species and appear to require plenty of room. The trees at Lara have attained a height of from 30 to 35 feet, with a stem girth at two feet from the ground of two feet nine inches. The soil they grow in is poor, and the rainfall rather light, but the plantations are near the sea, only a few miles inland.

It may be presumption on my part to assume that the Jarrah has not been planted under favorable natural conditions in California. Perhaps it has, and has failed to succeed as a forest tree, but I still think until I am assured to the contrary, that plantations in rangy country with a good natural rainfall, not too far inland, on deep granitic or ironstone soils, ought to give satisfaction. All our best timbers here, like the Ironbark (E. Sideroxylon), Grey Box (E. Hemiphloia), and the Jarrah (E. Marginata) are slow-growing trees, producing for that reason unrivaled hardwoods, and it cannot be expected that the Jarrah, even in a country like California, will grow with the celerity of the Bluegum or Sugargum.

* * *

In a later letter, answering questions which we sent him, Mr. Blackburne writes:

You ask me amongst other things if Australia is doing any commercial planting of trees in a large way. We in Victoria are not doing much yet beyond a few hundred acres of pines, acacias, and eucalyptus, and the other States have not, with the exception of South Australia and New Zealand, made much headway with planting. Our native forests are not exhausted yet and when the original is cut down seedlings come up like a crop of wheat and only require thinning and regulating to form a good forest again.

In establishing young eucalyyptus forests I have had considerable experience and always prefer to sow the seed broadcast instead of planting the young trees. When the seedlings come up (we sow in July) and attain a height of a few inches, say about March the following year, they are thinned out to a distance of seven or eight feet apart and allowed to stand for a few years until thinned again for commercial purposes. We do not water or irrigate under this system, but depend upon the natural rainfall (22 inches). We principally sow Bluegum and Sugargum. Eucalyptus raised in our nurseries for free distribution are sown in seed beds in the open and potted off into three-inch pots.

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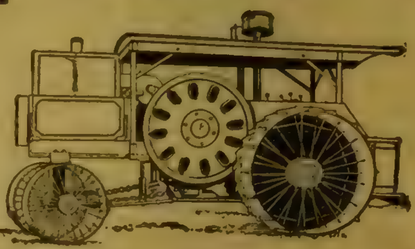

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Single Comb Black Minorcas (Northrup Strain), R. I. Reds (Tompkins Strain), also trio White Minorcas, and Rose Comb Black Minorcas.

Eggs for hatching and baby chicks.

C. U. Chamberlin, Los Gatos, Cal.

WRITE FOR FALL LIST—ISSUED OCTOBER 1st

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THE SILVA-BERGTHOLDT COMPANY
180 Orchard Street Newcastle, Cal.

AGRICULTURE

AMERICAN COUNTRY WAYS.

By Edward W. Perry.

MANY American country ways can scarcely be called ways of pleasantness. On the contrary, hey are usually crude and dirty, ugh and noisy. They waste time, ence and energy, and they spoil comfort of all who must endure ese defects. In dry seasons they are dusty, in wet weather they are little better than canals of mud; and at all times they are needlessly steep and costly.

This is true largely because American highways, like Topsy, "jest growed." Practically all our roads began as mere trails through vilds, were widened a little by the oneer who lopped off a branch ere, a root there and cut down a ree yonder, that his pack-animal might squeeze past. Later comers dug up a stump or a stone, now and then, and trimmed down the sharp banks of the stream, because they were using cart or wagon to carry wife and babe and household belongings to their new home in the wilderness.

All these early travelers followed the line of least resistance, so far as they found it without too much searching. Believing that they would not soon go that way again, and used to making light of such difficulties, our sturdy fathers did little more than was necessary to the moment. So many followed that in a few years they found it good to come together, now and then, to make roads, as neighbors in those friendly days used to have logging-bees, house raisings, apple-paring parties, and quilting-bees, and such other meetings for mutual help as might fairly be made an excuse for dance and frolic. To this hour, in many a corner of the land, road making is regarded as a yearly "bee" at which neighbor and friend should swap tobacco and yarns and jests between short spells of work.

But millions who dwell in country places now see that their wagon roads should be made far better than they have ever been, even when at their best. It has at last been seen that the condition of these roads affects the pocketbook of every human being in all the land, more directly and materially than it is affected to any other one cause. This will be so while every human being in the land must use products of the American farm, because all these products must be hauled over these thoroughfares from farm to market. The cost of such moving is increased by everything that hinders the easy moving of the wheels by which the products are carried.

More than half of the scores of millions of tons of things taken each year from American farms; practically all of the tens of millions of tons of food required by seventy millions of people of this country; all the millions of tons of cotton and of wool they wear, and many another thousand tons of other things th want for their health, their comfort or their luxury, must be hauled by animals through dust or sand or mud, up steep grades or over pebbles that make up the first stage of their journey from field to consumer. From this wastefulness no present relief is offered, because almost ninety-three of every hundred miles of American wagon roads are rough and steep, badly drained and costly.—From the National Grange.

ESSENTIALS OF DRY FARMING.

W. W. Burr, in charge of investigations of soils at the experiment sub-station at North Platte, Neb., has sent an interesting report covering three year's investigations in the storing of moisture in soils.

First:—That land which is under thorough cultivation absorbs water much more freely than land not under cultivation, or which is covered with grass or for any reason has a hard surface.

Second:—That land under thorough cultivation loses but little water from below the first foot of surface evaporation, so long as the mulch is kept in good condition.

Third:—That a growing crop uses water from the land in proportion to the growth of dry matter in the crop.

Fourth:—That land under summer tillage or thorough cultivation from May 1 to September 1 on the Nebraska sub-station farm has accumulated from 5.5 to 7 inches more water in the first six feet of soil than similar land growing a crop. The water so stored has been equal to from 4 to 50 per cent of the rainfall for the same period. The moisture content on summer-tilled land increases below the six-foot level and is apparent to a depth of at least 10 feet.

Fifth:—That water stored in the sub-soil to a depth of at least six feet is available for the use of farm crops, and that alfalfa is able to draw water from much deeper areas

Sixth:—That abundance of water in the sub-soil is a great protection to the crops against drouth, and that moisture in the surface soil, while it may favor the immediate growth of the plant, does not protect it against prolonged drouth. The protection of the crop against drouth is in almost exact proportion to the total available soil water within the reach of the crop.

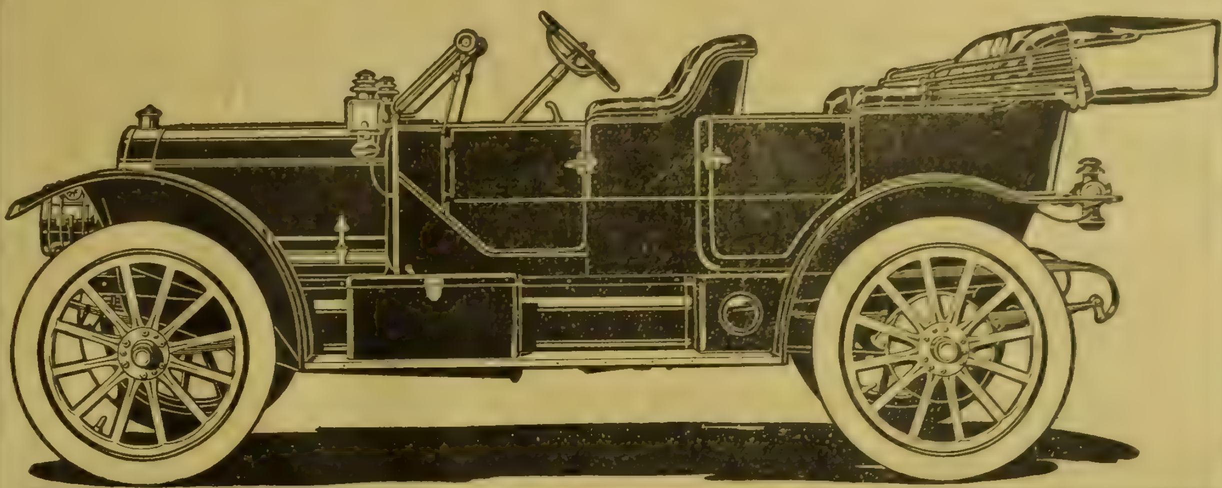
Seventh:—That grass crops (alfalfa and brome grass) dry the sub-soil to such an extent that the first crop following grass is wholly dependent on the season's rainfall for its moisture supply.

Eighth:—That a rainfall of from a quarter to a half inch may have a decidedly beneficial effect upon a growing crop, and is of great assistance in securing a good stand at seeding time. Such a rainfall has little or no effect in increasing the water in the lower soil unless the surface is already moist from previous rains. Less than a half-inch of rain falling on a dry soil mulch does not wet the soil below the mulch and is soon evaporated by the sun and wind.

Organization insures development. It is a step forward for the farmer.

Organization brings industries together to devise ways and means to better their conditions. Why will not the same association benefit the farmer?

By organization man has been able to ascend the scale of civilization, so by organization will be able to ascend to a still higher plane of progress and prosperity. Farmers are men, agriculture by God's will is the greatest calling of man, protect it then by organization.



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1911

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Every detail is refined, producing gratifying comfort and silence. Standard equipment with every model: Spare Wheel and tire, shock absorbers, top and envelope, wind shield, five lamps, gas tank and tools. Ninety-two per cent of all Rambler parts are made in the Rambler factory. Years of experience in cultivating painstaking habits of workmanship have created a standard of quality such that to actually make so many of the parts even in a factory as large and completely equipped as the Rambler, the output must be limited. The Rambler has acquired distinction as the standard car for the farmer because so many farmers possessing the keenest buying judgment have chosen the Rambler. In many cases the Rambler has been the choice of those who have had experience with cars of low value and have learned to demand better quality. They take pride in owning a car of quality. Many purchase the Rambler because of its exclusive advantages: the Spare wheel, which puts an end to tire trouble; big wheels and tires, which assure comfort and less tire expense; the straight-line drive, which saves power; and the offset crank shaft which enables you to climb a hill as fast as you want to go and to travel on high gear, in crowded traffic, no faster than a man usually walks.

You can have a copy of the Special Announcement Number of the Rambler Magazine if you will send us a postal at once, giving your name and address and stating the style of car you prefer.

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Well grown, true to name, and ready for immediate planting; of the New and Popular Variety, the

Placentia Perfection Walnut

A prolific and regular bearer of large, meaty, fine-flavored nuts, commanding from 2½c to 5c per pound more than the ordinary soft shells.

Choice trees, 3 to 14 feet, from 20c each and up; special low prices on lots of 200 and over. If contemplating planting a walnut grove, it will be to your interest to correspond with us at once, as the stock is limited and the price sufficiently attractive to clean it out quick.

Write today.

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5,000,000 Eucalyptus Trees

We have a large supply for **November Planting.** Our long experience as growers and shippers places us in a position to give our customers the very best service possible. This should mean something to you, Mr. Buyer. The proof of the pudding is in the eating; try us with your order. We are also large growers of **Apple, Pear, Orange and Lemon Trees.** Write for prices. Address

Covina Nurseries

312 Byrne Bldg., Cor. 3rd and Broadway, Los Angeles

For the first time in California, guaranteed seedlings are now offered of the

Best and Fastest Grower of all Eucalyptus, the

San Jose Gum

Has all good qualities of Blue Gum, but without its defects. Does not check, warp or come soft at the heart, is hardy, tougher, heavier and lasts longer than Globulus, and grows faster than any tree in the world. From choice parents 5 feet in diameter.

Plants packed lightly for long distance shipping by moss process, or balled in earth and packed in sawdust--equal to paper-pot method

These seedlings are grown by the the discoverer of the San Jose Gum, who has used this variety in millwork for ten years and finds it a perfect hardwood, superior to all. It is justly called **the King of Eucalypts,** and is destined to supplant most of the others.

For circulars and prices address

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George C. Roeding, Fresno, Cal.

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Beet Sugar, sack - $5.45 **Cane Sugar, sack - $5.65**
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The LaVerne Rotary Cultivator

The principle of Rotary Cultivation, is an entirely new one; the action of the teeth in the soil being different from solid, cut away Discs or ordinary Cultivators. It carries absolutely no soil with it and can be used at a greater depth with less draft than any other cultivator on the market today. The tool, works so close to the ground with no wheels or other attachments to catch limbs or tear off fruit, that it can be used to cultivate under the trees, where ordinary tools do not reach. The manner in which the teeth enter the soil, tends to keep them sharp and one set usually lasts a season.

We guarantee satisfaction in regard to work and quality of construction.

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Take Huntington Park Car on Seventh St .at Broadway, Spring or Main Sts.

Queries and Replies

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Chestnuts.

Can chestnuts be grown successfully in California? At what age do they commence to bear? Will they do best near the coast or in the interior?—G. B M., Nordhoff.

The Italian chestnut has been grown with more or less success in California, especially in the eastern foothill sections of the San Joaquin and lower Sacramento Valleys. They succeed best in a heavy clayey soil, coming into bearing at six or eight years of age. The Japanese variety is said to bear somewhat younger. The trees may be grown in nursery till several years old providing the tap root is cut at end of first year.

Bougainvillea.

I have bougainvillea four years old. It is a very strong plant but has had only one blossom this season and that dropped during the hot spell. It seems the heat cooked it I have seen other plants less than a foot high with a profusion of blossoms. This vine reaches to the second floor and has exceptionally luxuriant growth. The ground is exceptionally rich. What can be done to make it bloom?——L. B., Gardena.

We presume the trouble in this case is that the plant has been given too generous treatment. The rich ground has sent a wealth of growth up the side of the house and instead of having time to care for blossoms its whole energy has been given to growing branches and leaves. Also, it may be that the branches have been exposed to too direct sun heat, but we do not think at Gardena that would a factor. If, however, the roots might be left with full benefit of the sun and the branches drawn on the shadier side of the house, it might be a help. A slight withholding of water may also be beneficial, but when the vine once attains its growth, we think our subscriber will find an abundance of blossoms.

Length of Cord.

How long should a cord of stove wood be?—E. M., Loomis.

The dimensions of a cord of wood are 4 x 4 x 8 feet. Different sections of the country follow different practices in piling. The writer remembers in his section of the East a "cord" was usually held to be a single tier of 18-inch wood, 8 feet long and 4 feet high. In California a cord is considered three tiers of 12-inch wood 4 x 8 feet. To answer query as it is given, we will say that the length of the pile is 8 feet.

Pruning Malagas.

What time is the best to prune Malaga vines for best results? How early could I prune them without injury to the vines or coming crop, as I have so much Bermuda and Johnson grass that I would like to get to work the ground? Could I cut off the brush and prune later. I would like to get rid of the grass. It is a low, moist ground.—Subscriber, Selma.

Malaga grapes are usually pruned along in February. In cases like yours we have never hesitated to chop off the runners that interfered with cultivation in September. These are roughly cut off and the center canes that are not in the way can be left until the regular pruning time. The only idea in leaving them is that the vine may not be checked suddenly but have time to thoroughly ripen its wood. I sometimes think this is more theory than actual knowledge for where vines are pruned early it does not seem to greatly affect them in growth. On land like yours the weed knives should be run all summer and the hoe used close in at the trunks. One summer of constant work will nearly finish these pests. The difficulty is they are allowed a fresh start each season. The constant running of the weed knives will prune off runners that would be in the way early and the vines then grow more upright and out of the way without hurting them.—M. E. S.

Mange-Canker.

Some of my pigs have been having what at first I thought was just a cold —their eyes began to matterate and almost closed and little lumps about the size of a pea raised up on their ears and noses almost like blisters. A young boar is the worst as his eyes are quite shut and there is a breaking out around his eyes and a ring of the same around his tail about an inch from the root where the skin looks almost raw. Am feeding stock beets, fresh alfalfa, a little skim milk and a little boiled squash or potatoes. All eat well.—H. G. F.

From the description this may be mange or it may be canker sores. If it is mange the pigs should be washed all over with soft soap and then dry fine sulphur well rubbed into their skins. If the hogs are large a tank for dipping has to be used and tobacco solution is found excellent. The pens should be sprayed with a disinfectant solution and if possible remove the pigs to fresh ground and plow up the old yard, planting to barley for one season. If the trouble is canker dissolve one ounce of permanganate of potash crystals in a gallon of water and dip the pigs in it; be sure every infected spot is reached. After the pigs are dried rub carbolated vaseline on the sore places. The pens and surroundings must be disinfected carefully to prevent reinfection.—M. E. S.

Dairy Questions.

At what temperature should the cream be, to be ready for churning? Also, is there any coloring or preservative article that you can recommend since most ranch butter seems so white? Would like also to ask how much salt should be used to a pound of butter, also your recipe for cottage cheese.—Subscriber, San Dimas.

We usually churn at 50 degrees in California when making butter in a small way; 40 to 54 are about the limits of temperature. Common salt is the best preservative for butter. It may be used as high as one and a half ounces to the pound. The old-fashioned people that packed butter for market used to make a mixture of four pounds of salt, one pound of sugar and six ounces of saltpetre. The saltpetre I am not sure is now allowable under the Pure Food Law. It is not believed by chemists to have had much effect in keeping the butter. The coloring that we like best is Hansens, but any of those offered for sale are admissible. Salt one ounce to the pound is the usual rule.

The making of cottage cheese is a simple matter. If made from skim milk, heat to blood heat and let it stand until it clabbers. Then put on the fire and bring to a scald until it begins to separate. Have it ready to stir until curds are formed, then put into bags and drain. After it is rather dry, take in the butter bowl and rub smooth. A fork will do this. Salt, stir in cream and mold into half-pound balls. The other way is to use the buttermilk..—M. E. S.

Chestnuts on Oaks.

I wish to speak of my experience with grafting a chestnut on a live oak. The chestnut and oak are members of families nearly related. I took an oak tree two inches in diameter, cut it off and inserted scions from a desirable chestnut. I have now three branches about 16 inches long that are growing well and apparently making a fine union with the parent stock.—Edward Mazel, Loomis, Placer county.

Business Notes

NITRATE OF LIME.

The recent meeting of the Soil Convention in Los Angeles for the discussion of various matters pertaining to the soils and their treatment, such as fertilization, has brought out considerable new information. The principal speakers of the Convention were very profuse in their criticisms of some of the methods and materials employed in fertilization, and also quite complimentary regarding some of the operations with reference to the chemicals and materials used in fertilization. One point brought out in these discussions was that Nitrate of Soda persistently applied to the soil produced a black alkali which was detrimental. The new Nitrate producing chemical, Nitrate of Lime, manufactured in Norway, was spoken of very highly as a nitrogen conveying agent. One of the essential features with reference to this Nitrate of Lime is the fact that the black alkali is not produced, but a beneficial constituent, Calcium, is brought forth in its stead. The Braun Chemical Company, of Los Angeles, are the disributers in Southern California for this Nitrate of Lime, and any information required regarding the same will be cheerfully given by them upon application.

TRACTION IN AGRICULTURE.

Another step towards power cultivation has been made by an inventor of Birmingham, Alabama, who is now manufacturing a traction cultivator weighing under 3500 pounds which uses for generating power either kerosene or gasoline. The cost of operation is said to be exceptionally light and its work on practically all kinds of soil most satisfactory. The time is coming for this style of economy on the farm.

Theodore Payne has just published a new booklet on California Wild Flowers. It is artistically printed with some fine half-tone cuts and describes nearly one hundred species with valuable notes on their culture. Many California wild flowers, especially the annuals, are of easy culture, requiring scarcely any care and will produce a grand display of flowers for many months. Mr. Payne has made a study of the native flora for many years and has often advocated the culture of wild flowers in our gardens. He is the first one to collect and place before the public seeds of these beautiful flowers; his former publication met with such appreciation from the public that we feel sure our readers will be pleased to hear that he has now issued a new booklet.

POULTRY SHOW DATES.

Stockton, Cal., Nov. 8-12, 1910. First Annual Exhibition of the San Joaquin County Poultry Association. Eugene P. Sabin, Secretary, Stockton.

Oakland, California, Nov. 22-27, 1910. Annual Exhibition of the Alameda County Poultry Association. E. K. Healey, Secretary, Alameda, Cal.

Seattle, Wash., Dec. 5-10, 1910. F. E. Barth, Secretary.

Portland, Oregon, Dec. 5-10, 1910. J. C. Murray, Secretary; M. W. Coates and Harry H. Collier, Judges.

Petaluma, Cal., Dec. 8-11, 1910. Fourth Annual Poultry Show of the Petaluma Poultry Association. H. R. Campbell, Secretary, Petaluma.

Santa Barbara, Cal., Dec. 18-19, 1910. The annual show of the Santa Barbara Poultry and Pet Stock Association. W. E. Lingard, Secretary, R. F. D. No. 2, Santa Barbara, Cal.

Ashcroft, B. C., Dec. 23-31, 1910. W. Maxwell, Secretary; H. H. Collier, Judge.

Tacoma, Wash, January 3-11, 1911. Frank L. White, Secretary, South Tacoma; Miller Purvis, Judge.

San Diego, Jan. 4-5-6-7, 1911. San Diego Pigeon and Pet Stock Club. A P. A. rules. W. C. McDougal, Secre-

Los Angeles, Cal., Jan. 5-11, 1911. Annual of The Poultry Breeders Association of Southern California at Chutes Park. A. H. Memler, Secretary, San Gabriel.

Colfax, Wash., Jan. 10-14, 1911. H. Rosenkranz, Secretary. H. H. Collier, Judge.

Walla Walla, Wash., Jan. 17-21, 1911 H. Dickinson, Secretary; H. H. Collier, Judge.

Jerome, Idaho, January 24-28, 1911. Wm. N. Hardwick, Secretary.

Live Oaks Farm

Frank A. Meacham, Proprietor.

Importer and breeder of RED POLLED CATTLE, SHROPSHIRE SHEEP, RAMBOUILLET SHEEP, HORNLESS AMERICAN MERINO SHEEP. Both sexes for sale. Take electric car at Petaluma or Santa Rosa for LIVE OAKS STATION. Address all mail to Petaluma, Sonoma Co., Cal.

Money Making Little Liners

In this department we will insert your advertisement under a classified head for 1½ cents per word per issue. No ad accepted for less than 25 cents. Our classified columns are the clearing house for our many thousand readers.

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Farm Manager—Covering years of practical and scientific dairying, sanitary and certified milk, grade and registered stock, East and West, is open for similar position. Or, if preferable, would consider proposition to hire your farm for term of years, on share or cash rental, if carrying 50 to 150 deep milkers, tools, etc.; sterling references. Address Manager, Box 34, Parker, Arizona.

Wanted—Your work pays the expense to learn a trade that pays $5 a day, in a few months' time; electricity, automobiles, plumbing, bricklaying; actual contract jobs; 200 students last year. United Trade School Contracting Company, 647 Pacific Electric Bldg., Los Angeles, Cal.

Wanted—Man and wife to work on an orange orchard. Man to work in the orchard and wife to cook for three or four men. Each must be competent in their line of work and come recommended. Good wages and steady place for the right parties. Apply to R. D. Williams, Exeter, Tulare Co., Cal.

Help Wanted—We want several good solicitors to solicit for a high class suburban monthly publication. Good profitable employment to the right party. For particulars address Box H, Cultivator Office, Los Angeles.

300 Farms Wanted—Let experienced, reliable people sell or exchange yours. Have customers. Parrish Barker, 207 Union Trust Bldg., Los Angeles.

MACHINERY.

For Sale—Second-hand windmills, tanks, engines, farm machinery that will do same work as new at half price. Small distillate tanks, 50 gallons up. Domestic and irrigating tanks, galvanized and redwood, 500 to 10,000 gallons, also 50,000 gallon redwood tank, fine for storage or irrigating. Steam engines with steam pumps; gasoline engines, 3 H. P. Fairbanks engine, geared pump jack, pipe, pump complete with 22 ft. tank stand, 2,000 gallon tank all for $150, also many other sizes. Special 20-day bargain; 12 H. P. Fairbanks engine, No. 2 deep well Ames double acting pump jack, 65 ft. casting, rods, and double acting cylinder, 50 ft. belt, all complete and now pumping 20 inches water from 65 ft. well into large reservoir 110 ft. on top of hill. Our price $380 on cars if taken before we have to move it. Also another complete mounted wood sawing outfit, $300. Gang, disc, road, riding, walking plows, cultivator, feed rack, bone grinder, Fresno, wheel and slip scrapers, wagons, surrey, grading tools, sundries. Demmitt Co., upstairs, 120 N. Main, Los Angeles.

For Sale—35-H.P. Fairbanks-Morse gas engine in good order. Very anxious to sell, so will make low price. Machinery Exchange, Main and Bruno Streets, Los Angeles, Cal.

For Sale—11-H.P. gas engine, recently secured, thoroughly overhauled. Will make exceptionally low price and give guarantee for a year. Baillie & Brandt Co., 943-945 N. Main St., Los Angeles, Cal.

TREES.

Fruit Trees—Get our advance prices. Choice 4-inch pot roses, 15c. Our tree specials won't last long. Get wise. Ballou's Nursery, Pasadena, Cal.

Marsh Seedless Grapefruit—600 large trees for sale. E. S. Thacher, Nordhoff, Cal.

For First-Class Valencia and Navel Orange trees and Eureka lemons, see A. G. Snow, Oxnard, Cal.

Fine Line of Navels—Valencias and Eureka lemons for delivery spring of 1911. Contract now and get the first choice. The King Citrus Nurseries, Whittier, Cal.

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For Sale—Registered Holstein Bulls; 1 to 2 years old. Some sired by Prince Juliana, brother of former world's record heifer, Juliana De Kol. Dam and granddam, A. R. O. cows. Three record-breakers in some of their pedigrees. M. E. Sherman, Minnewawa Vineyard, Fresno, Calif.

Milch Goat Stud—"Andreas Hofer," imported registered Saanen buck, a proven getter of 4 to 5 quart does even by Angora dams. Fee, ten dollars, including care, feed and cartage. Bred does for sale. R. M. Cartright, San Luis Obispo, Cal.

Milch Goats—Pair young Toggenburg-Saanen does bred to imported Saanen stud, $25.00 each. Three-quarter Toggenburg buck, remarkably fine, $35.00. B. A. R. Stocker, San Luis Obispo, Cal.

Milch Goats—Young three-quarter Toggenburg, extra fine buck and several does, hornless beauties. For sale. B. A. R. Stocker, San Luis Obispo, Cal.

Registered Shorthorn Bulls and Poland China Hogs for sale. Best breeding. P. H. Murphy, Perkins, Cal.

For Sale—25 head of good milk cows and one bull. Address N. Rouff, Palmdale, Cal.

HORTICULTURAL PRINTING.

The Kruckeberg Press, 123 South Los Angeles St., Los Angeles, Cal., makes a specialty of Horticultural Printing and Engraving. Cuts and illustrations of all standard, economic and ornamental plants on hand and subject to the use of patrons without cost. Samples and estimates cheerfully furnished. Remember, we design, write, engrave, bind and print; in brief, do the "whole thing," at no additional expense to the customer. Correspondence a pleasure.

MISCELLANEOUS.

Learn Wireless and R. R. Telegraphy! Shortage of fully 10,000 operators on account of 8-hour law and extensive "wireless" developments. We operate under direct supervision of Telegraph Officials and positively place all students, when qualified. Write for catalogue. Nat'l Telegraph Inst., Cincinnati, Philadelphia, Memphis, Davenport, Ia., Columbia, S. C., Portland, Ore.

FARM LANDS FOR SALE.

Owens Valley Lands—The greatest opportunity for the California farmer today is awaiting him in the Owens River Valley. This remarkably fertile spot possesses more attractive features than any land in California. The only land in California that will produce with equal results the big red winter apples that have made Washington, Oregon and Colorado famous, and have brought to the owners untold wealth. California farmers should learn real conditions of apple culture and appreciate that these lands under development, are equal in value to our choicest orange lands. The conditions which surround Owens River Valley are ideal in every particular. Not only is the climate nearly perfect and the scenery all that one could desire, but the productiveness of the soil excels anything in California. Corn 13 feet high, with ears 18 inches long, running 70 bushels to the acre. Potatoes that run 500 bushels to the acre, equaling the famous Greeley, Colorado district, where such land is worth $500.00 an acre. So remarkable is the productiveness of the soil in the Owens River Valley that one should consider its value purely upon its ability to earn, rather than to compare it indifferently with acreage in any other section. There is just as much difference between the Owens River Valley land and the land that is ordinarily offered as there is between the value of Hill St. and Broadway property. The Owens Valley land is 4,000 feet above the sea, with just sufficient frost in winter to make a perfect red apple. Fogs, hail or gales are unknown. The supply of pure mountain water is unlimited and the completion of the new Southern Pacific railroad, which will be running in 30 days, makes the entire proposition ideal. You owe it to yourself to thoroughly investigate this property, for there will be, without a doubt, a greater increase in value in the Owens River Valley in the next few years than in any other point in California. In fact, we look for nothing short of a boom the coming year. If you own orange or walnut land that you can sell at a good price, you will certainly be making a good move to dispose of it and go into this new country. We can doubtless help you in selling your land. We have done it for others. Drop into this office and talk with our representative, who is an old Rogue River apple man of 20 years' experience, and who has studied Owens Valley conditions and can give you a very intelligent description of our property, or drop us a postal and permit us to send you our literature. James R. H. Wagner, H. S. Cook, Room 13, 329 South Hill St., Los Angeles, Cal.

Stock Range With Plenty of Water—A friend owns 5 springs on best free range in Arizona. You can buy them for $2,500 and each member of your family 21 years old can take 320 acres government land alongside. Eight miles from station. The range is covered now with green feed knee high. Best opportunity in America. Write and I will tell you where to find the springs and owner. Scott, 951 S. Figueroa, Los Angeles.

For Sale—A 20-acre farm for $20 cash and $20 a month; possession now; $90 to $125 per acre; your crops pay for the land. Rich, level land for alfalfa, oranges, almonds, grapes, cows, chickens; abundance of ditch water, for irrigation, for $1 an acre a year. Where else can you get this? In Oakdale Colony, near good town and railroad station, climate delightful. T. Wiesendanger, 207 S. Broadway, Los Angeles, Cal.

For Sale—815 acres in San Luis Obispo County. A typical dairy ranch. Plenty of wood, water, irrigable land, buildings, fenced and cross fenced. Orchards, vineyards, oranges, lemons and walnuts do exceedingly well here. Forty acres of land suitable for these. Price $21 per acre. For further particulars apply to Mrs. F. A. Clink, Pozo, Cal.

20-Acre Ranch—In the orange belt north of Exeter. 10 planted to oranges, well that tested over 100 inches, with pumping plant installed. Electric lights, running water, and ideal location. ½ mile from railroad. For one desiring a home, they could not find things nicer or location better. Address Box 103, Visalia, Cal.

$6,500 Buys 120 Acres—Situated 3 miles south of Santa Maria, good improvements, plenty water, orchard, large barn and corral, chicken houses, windmill, tank, tank house, and modern six-room cottage with bath and pantry. Every modern convenience. Address R. Morrison, Owner, Santa Maria, Santa Barbara Co., Cal. Box 171.

Irrigated Land For Sale, Cheap—In the Lower Rio Grande Valley of South Texas. Ideal climate. Good markets. Large crops. Special inducements to several practical irrigation farmers. Address Manager, American Rio Grande Land & Irrigation Co., Mercedes, Hidalgo County, Texas.

For Sale Cheap—$300 buys a 160-acre relinquishment claim, fine rich level land, plenty of water at 150 feet. Close to a fine market. This is the best bargain you ever heard of. No exchanges. Wm. T. Mantz, Pattiway, Cal.

Apple Orchards—Large and small, in the only apple producing section in California. The greatest section west of Missouri River. Write for booklet. Geo. W. Sill & Co., Watsonville, Cal.

Fruits, Flowers, Sunshine, Progress—All these invite investigating beautiful Hemet Valley, Southern California. Booklet free. William Kingham, Hemet, Riverside County, Cal.

For Sale—A bargain! One of the best 5-acre fruit and alfalfa ranches in Escondido Valley; good house, outbuildings, well, windmill, tank, fine shade; 1½ miles from Escondido; $2650. For particulars address C. O. Husted, San Marcos, Cal.

For Sale—El Cajon Grant Land. In the heart of El Cajon Valley, 30 acres of choice vineyard, large house, cottage and barn; trays, boxes, etc. Close to proposed electric line. S. B. Hawley, 1548 D St., San Diego, Cal.

25-Acre Ranch—With buildings, water, some fruit, close in Santa Rosa. Sell all or part. Albert Bacon, R. D. 5, Santa Rosa, Cal.

The Best Buys in farm lands in Central California can be had through us. Call or write Sterling Securities Co., Savings & Loan Bldg., Stockton, Cal.

FARM LANDS FOR SALE.

Tulare County Dairy Ranches Pay—I have several very attractive propositions in lands adapted to dairying, alfalfa, hogs and cattle. Some of them with artesian wells and pumping plants. Immense body of surface and artesian water underlaying the surface from 12 to 20 feet. On main line railroad. Close to town and schools. Telephone and electric lines near. Some improved places. Values are increasing fast but I can show you property with some improvements at $40.00 and up. Also have cheaper land that contains some fine alfalfa land and balance grazing. C. H. Biggin, Pixley, Tulare Co., Cal., or 1813 S. Union Ave., Los Angeles.

For Sale—480 acres, 20 miles of Delano. All fenced and cross fenced in 4 fields. Some improvements. Large body of water by damming creek. 4 wells and one spring. Water rises within 5 ft. of surface. Price $15.00 per acre. $3000 down, balance mortgage. Parrish Barker, 207 Union Trust Bldg., Los Angeles.

Farms Wanted—Don't pay commissions. We find you direct buyer. Write, describing property, naming lowest price. We help buyers locate desirable properties free. American Investment Association, 12 Palace, Minneapolis, Minn.

For Sale—Quite a variety of alfalfa and fruit ranches in several counties. Also some land in good, new settlement. Send for descriptive list. Address, W. S. Ritchie, Corona, Cal.

For Sale—5 acres good land for apples, berries or chickens, close to electric cars, school, store; price $1500, easy terms. Address Frank Lima, Box 94, Sebastopol, Cal.

POULTRY.

For Sale—A few choice White Rock cockerels hatched from eggs bought of U. R. Fishel, Hope, Indiana. The eggs cost me $8.00 per setting and $2.00 expressage. "Fishel's White Rocks are the best in the world." You should get one or two of these cockerels and introduce some new blood direct from Fishel in your flock. It will prove a great investment for you. Some of them are good enough to exhibit in any show. Price $3.00, $5.00 and $7.50 each. Mrs. E. E. Young, 444 East 48th St., Los Angeles.

How to Make Money—Mrs. A. Basley's New Poultry Book is just out. It is without exception the most wonderfully complete manual on the subject of successful poultry management ever written. The secret of how to raise every turkey hatched and the "Basley Formulas," now published for the first time, are worth many times the price of the book. The "Western Poultry Book" is a practical book by a practical woman. Price $1.00. Address Mrs. A. Basley, Box 77, Venice, Cal.

Hayes, R. B., Poultry Fancier and Rhode Island Red Specialist—30 breeding pens of Reds, 20 pens miscellaneous varieties. See our birds, they tell their own story, or write for circular. Eggs for sale only. Yards in Arroyo, opposite Ostrich Farm. Box 35, Garvanza Sta., Los Angeles, Cal. Phone East 1631.

Until November 15th, special mating Kellerstrass Crystal White Orpingtons, $3.00 for 15 eggs. Buff Wyandottes, the classy American bird, $1.50 for 15. Best winter layers. No more at this price; try them. Eggs and stock guaranteed.. Frank Haasis, Ontario. Cal.

For Sale—Eggs for hatching. Black Minorcas, Barred Plymouth Rocks, Rhode Island Reds, and Buff Orpingtons, $1.00 per 15, $5.00 per 100. Day-old chicks, 12½c each. Also cockerels. Cash with order, or stamped envelope for reply. L. W. Neilsen, R. R. 2, Box A1, Petaluma, Cal.

For Sale—Eggs for hatching, Black Minorcas, Barred Plymouth Rocks, and Rhode Island Reds, $1.00 per 15, $5.00 per 100; chicks, 12½c each. Also pullets and cockerels. L. W. Neilsen, R. R. 2, Box A 1, Petaluma, Cal.

LOVELL'S BLACK MINORCAS
California's
Greatest Egg Producers

Pedigreed, trapnested, scientifically bred. Free circular. DAVID J. LOVELL, 5720 So. Park Ave., Los Angeles, Cal.

BONNELL'S S. C. BLACK MINORCAS
WIN EVERY TIME.

A few cockerels for sale. C. C. Bonnell, State Vice-President American Black Minorca Club, 2919 Brighton Ave., Los Angeles.

Lodi Hatchery—Just hatched, chicks from healthy, heavy laying stock. Booking orders for later delivery. T. C. Hawley, 504 E. Elm St., Lodi, Cal.

Single Comb Brown Leghorn Eggs—$5.00 per hundred, $1.50 single setting. Mrs. E. Foran, Box 445, Visalia, Cal.

Poultry Wanted—We pay the highest market price for all the local poultry we can get, no matter how large the quantity; also fresh ranch eggs. We remit immediately. Allaway & Layton Co., 607 E. 3d St., Los Angeles, Cal.

For Sale—Thoroughbred Rose Comb Black Minorca Cockerels, Eleanore Minorca Farm strain. W. H. Fowle, Box 55, Route 1, Denair, Cal.

Pacific Hatchery—Baby chicks, incubator eggs, and selected thoroughbred poultry, ranch raised. W. W. Clough, Ontario, Cal.

For Sale—Young thoroughbred Bronze turkey toms. Good strong vigorous stock. R. B. Thayer, Thermal, Cal.

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Some Choice New Crop Eucalyptus Seed for sale. Apply George Schornick, 202 N. Mott St., Los Angeles. Telephones—Boyle 1665. Home 41536

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Milk Coolers, Bottles, Caps, brushes, Buhl milk cans, Sharples separators, Babcock testers, veterinary instruments, wood soled boots and shoes, and our celebrated "Prosperity" washing powder. Guy F. Kelsey, 108 E. 8th St., Los Angeles, Cal.

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LIGHT—NOT HEAT

The Angle Lamp gives less heat than any other method except incandescent electricity. Will *not* scorch or discolor your ceiling, etc. Eliminates possibility of fire. Gives well distributed shadowless light without dangerous and unpleasant heat—delightful to read or work by.

The Angle Lamp

is the simple, economical, convenient and perfectly satisfactory method of burning common kerosene. It *never* smokes or smells whether burned at full height or turned low. *Lighted and extinguished like gas.* Filled like a water bottle. Requires filling about once a week.

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Being fully 1/3 to 1/2 more economical than even the ordinary lamp it soon saves its cost. It is made in 32 varieties. Come in and see it or *write for catalog.*

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OLDEST AND LARGEST IN THE SOUTHWEST
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Over 59,000 Open, Active Accounts

4% Interest on Savings Accounts
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Which Accounts may be checked against without presentation of Pass Book. Interest is paid monthly on the minimum monthly balances provided it amounts to $300 or over.
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Entire year—enter any time. Get rates. F 1850, Main 2305

Household Department

FOR THE MASTER'S USE.

The writing desk lay open. Its owner had been called away in the act of beginning an important letter. On it were laid a sheet of note paper and an envelope; beside it stood the ink bottle, and close by lay a pen, the blotting paper, and the pen wiper.

The silence of the room was broken by the note paper speaking to his companions.

"You needn't look so consequential," he said, scornfully; it is on me the letter will be written."

"Yes," said the pen, "but you forget it is I who write it."

"And you forget," said the ink, "that you couldn't write without me."

"You needn't boast," said the ink bottle, "for where would you be but for me?"

"It is ridiculous of you all to be so conceited," interposed the blotting paper; "only for me what a mess you'd be in."

"And may I ask," said the envelope, "what use would any of you be if I did not take the letter safely where it is to go?"

"But it is I who write the direction on you," snapped the pen.

"Dear sirs, please stop quarreling," gently said the little pen wiper, who had not spoken yet.

"What have you to say?" asked the pen, contemptuously. "You are nothing but a door mat," and he laughed at his own wit.

"Even if I am only a door mat," said the pen wiper, humbly, "only for me you would be so rough with dried ink you couldn't be used. And that is all any of us are good for—just to be used. We might all stay here for the rest of our lives, and not all of us put together could write that letter. Only the hand of our master can do that."

"I believe he's right," said the envelope and note paper together.

"Yes," said the ink, "it was foolish of us to forget that we can do nothing unless we are used."

"True enough," murmured the ink bottle, "for what use would I be if you were not in me?"

"Yes, to be sure," said the blotting paper, "we ought to have thought of that."

"Indeed, yes; and I'm sure I beg your pardon, Mr. Pen Wiper, for calling you a door mat," said the pen in a humble voice.

"Please don't mention it," said the little pen wiper, "but I do think we would be happier if we would just do the best we can, without being jealous."

As he spoke, their owner re-entered the room and silence fell. The pen was taken up, dipped in the ink and passed to and fro on the note paper; the blotting paper pressed on it; the letter placed in the envelope; the address written; the pen wiped on the pen wiper.

"We have each done our part," murmured the ink.

"Yes," said the pen, "and without our master we would have done nothing at all."—The British Messenger.

HER STATUS.

Ella: Nothing very serious about her.

Stella: I should say not. If that woman knew the world was coming to an end next week, it would be just like her to write to a newspaper, asking what to do for blackheads.—Harper's Bazar.

UNSELFISH.

Mrs. Backbay: Why are you leaving us, Bridget?

Boston Cook: Me reasons are philanthropic. I want to give some wan else a chanct at the joys of living with yez.—Harper's Bazar.

ANTICIPATED.

Margaret: Did you tell the girls at the tea that secret I confided to you and Josephine?

Katherine No, truly I didn't. Josephine got there first.—Harper's Bazar.

THE LITTLE THINGS.

My dear, the little things I did for you
 To-day have brought me comfort, one by one,
 As through the purple dark a shaft of sun
Strikes far at dawn, and changes dusk to blue;
The little things it cost me naught to do
 Remembering how slow life's sands may run,
 Today a web of purest gold have spun
Across the gulf that lies between us two.

Oh, dead and dear, the many little things!
 The loving words I did not fail to say,
The kiss at parting, the caressing touch—
What shriven peace to me the memory brings!
 And weeping at your open grave today,
No single pang because I did too much!
 —Myrtle Reed, in Harper's Bazar.

HOMELY HINTS.

To promote longevity fill your little daughter's doll-head with cotton before it is attached to the body and you will find that the eyes will not fall in, and the danger of breakage from falls will be reduced.

It will be found economical if a large piece of cheese is bought at a time. Brush it over with a thin coating of fresh butter to keep the cut parts soft and fresh, and then wrap it in paraffin paper.

In goods which fray easily, it is a great help when making buttonholes to stitch twice around on the sewing-machine before the hole is cut, as a firmer foundation is insured, and no unsightly fraying results.

One way to avoid a possible cold.—After one has applied a mustard poultice, it is a good plan to rub that part of the body with camphorated oil to avoid the possibility of incurring cold.

It is said that the best way to take castor oil is in the juice of an orange, to avoid any taste of the oil. Another way is to put it in capsules. In lemon juice is a good way, as it is not unlike salad dressing. In soda water with a lemon or lime flavoring is an excellent method. Another excellent one seen recently recommended the use of ice, before the dose is given. A colorless, odorless variety of the oil is obtained, and the dose of this is covered with orange juice. Before the medicine is given, the patient chills his mouth thoroughly by chewing cracked ice. The medicine may then be given without leaving a disagreeable taste. By chilling the mouth first the oil will not leave an oily film which is responsible for the tenacity of the unpleasant taste.

"Pins by the pound," are perhaps as out of the ordinary as "buttonholes by the yard," but they may be purchased in this way at a great saving. Half-pound boxes of pins are sold for 25 cents, and contain more pins than five of the ordinary packages. Besides the economy of the purchase, there would be the added advantage of never having to hunt for a pin, with this generous supply at hand.

A woman whose husband objected to wiping the dishes for her because "it isn't a man's work," read to her surprised helpmeet from the Bible. 2 Kings 21: 13, "I will wipe Jerusalem as a man wipeth a dish, wiping it and turning it upside down." He has meekly wiped the dishes ever since.

Occasionally a cream sauce or soup suddenly curdles just after the salt has been added. This shows that the milk was not perfectly fresh. The safer way, when one is uncertain of the milk, is to add salt just before serving the sauce or soup.

EASY TO CLEAN

Prices 60c. to $3.50

Liberty Lanterns

The cut above tells the story—look at it. One hand lifts the "hood," the other removes the globe. Now lift the burner from its place—wipe it—slip in a new wick—rub globe and lamp free of accumulated oil and lamp-black and replace parts. Now your Liberty Lantern is clean, safe, ready for business. Could anything be easier?

Liberty Lanterns give a powerful light. Every well-known and some exclusive improvements are embodied in Liberty Lanterns. Ask your dealer about them.

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THE LARGEST ASSOCIATION IN CALIFORNIA
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Send for 20th Annual Statement and Booklet

He—It has been said that a woman can make a fool of any man. Do you believe it? She—Of course not. The best she can do is develop him.—Chicago Daily News.

THE CHILDREN'S TABLE MANNERS.

"After a long illness in the hospital, I returned home to find that my children's table manners had suffered a complete demoralization," says Woman's Home Companion for June. "They 'gobbled,' used knife and fork indiscriminately and always awkwardly, regarded their spoons as shovels and, in short, were perfect little savages.

"In order to remedy this quickly I started a series of 'company luncheons,' at which I was the hostess and the children the guests. I set the table as prettily as possible and made funny little place-cards. The children played up delightedly, took grown-up names and even washed their hands without a murmur. We made a set of simple rules: The guests who behaved perfectly received three pieces of candy, the guests who made only one mistake received one piece of candy. while any unfortunate guest who committed three breaches of table etiquette received no candy at all.

"Questions on table manners were in order at any time, to be answered by the hostess.

"I chose dishes for these luncheons which are not always easy to eat elegantly, and I was very happy to see how quickly the children improved in table manners and other manners as well, for our 'company luncheons' seemed to help general courtesy quite wonderfully. The best of it was that there were no nagging nor cross words. It was all in good fun, and my four youngsters can now go anywhere and eat anything, and mother has the proud consciousness that they will always appear to good advantage."

REAL BOSTON BEANS.

Soak one quart of pea beans in cold water over night. In the morning put them into fresh cold water and simmer until soft enough to pierce with a pin, being careful not to let them boil enough to break. If you like, boil one onion with them. When soft turn them into a colander and pour cold water through them. Place them with the onion in the bean pot. Pour boiling water over one-quarter of a pound of salt pork, part fat and part lean; scrape the rind until white. Cut the rind into one-half inch strips; bury the pork in the beans, leaving only the rind exposed. Mix one teaspoon of salt—more if the pork is not very salt—and one teaspoon of mustard, with one-quarter of a cup of molasses. Fill the cup with water; when well mixed pour it over the beans; add enough more water to cover them. Keep covered with water until the last hour; then lift pork to the surface and let it crisp. Bake eight hours in a moderate oven.

OUR MANY SELVES.

The organization of the human mind is fully as complex as the organization of an army, so various are the moods, so multiform the characters under which each individual may show himself, so hard is it to insure action as a unit, so great is the danger of disruption and dissociation into inharmonious elements.

"Within my earthly temple there's a crowd;
There's one of us that's humble, one that's proud;
There's one that's broken-hearted at his sins,
And one that cares for naught but fame and pelf.
There's one that loves his neighbor as himself,
And one that, unrepentant, sits and grins;
From much corroding care should I be free,
If once I could determine 'which is me.'"

Nervous breakdown is one of the results of not knowing "which is me," or how "I" in a given emergency may act.

PRUNE SALAD.

Prunes served as a salad are a novelty that is decidedly worth trying. The prunes, after cooling, are candied with walnuts or pecans, put on the crispest, palest lettuce leaves and dressed with a dressing having twice the amount of lemon juice as it has oil, and mustard, celery salt and pepper. It's a delicious salad.

New High Grade Automobiles
at Prices Lower Than the Price of Medium Grade Cars

To Prospective Automobile Buyers:

You naturally wish to purchase the highest grade car you can ge for your money, and you naturally want a higher grade car than th dealer can afford to sell you for the amount of money you wish t pay—we will meet your views for a short time.

We have a limited stock to dispose of—all high grade—and al prices to meet the needs of moderate priced car buyers.

Whiting, Davis and Westcott Cars
in Two and Five-Passenger Models

These are not shopworn cars, they have never been driven a mile, and are the latest models received.

We have sold the lease of our garage and have not at presen the necessary equipment and room at our store to properly handl automobiles, so we offer you the opportunity to buy a car of highe grade than you ever thought of owning and at a price no higher than is charged for a medium grade car.

Call at Newell Mathews Company, 200 North Los Angeles Stree Los Angeles, Cal., or write us, stating whether you wish to buy a one-seat or two-seat car and we will send you full information o have our salesman call.

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17 REASONS

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ART SUPERB BLUE POLISHED STEEL RANGE

This Stove is Built in Our Own Factory
OF HEAVY HARD-ROLLED BLUE steel plate, possessing the greatest possible strength and toughness. In point of design, proportion and mechanical construction it is as perfect as a scientific study of range building can make it.

As Illustrated Without Reservoir
31.65
OTHERS FROM $26.95 to $36.65

IT WILL BURN HARD AND SOFT COAL, COKE, WOOD AND CORN COBS

THE 17 REASONS This range has interchangeable key plate top; feed pouch or broiler door; option of 16-18-20 inch oven; handy direct-draft damper; large smoke pipe; circular smoke pipe check; duplex grate; cast-iron flue box; famous fuel-saving, California extension fire-box; large ashpan; sliding draft poker door; fire door; balance oven door; high closet; tea-pot stands; ash-pit door; all finely nickeled and polished and ready to set up.

THE BODY Is made of cold rolled polished plate steel. Requires no blackening. Parts exposed to the heat thoroughly protected by asbestos sheet covered with steel. Closely riveted.

THE OVEN Heavy steel, protected and strongly braced. Seams and joints riveted. Will not warp or buckle. Patent balanced door. Adjustable steel shelf. Bright inside.

THE FIRE BOX Is latest improved California oblong curved end. Wood burning extension. Heats perfectly without waste. Gas and smoke consumer. Ventilated lining.

WARMING CLOSET Is extra large. The door operates on roll hinges. Accurately balanced. Can be opened easily with one hand. A practical necessity. Handsomely trimmed in nickel.

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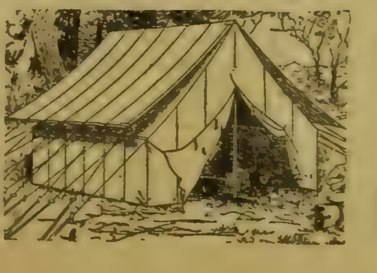

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Manufacturers of ***The Best Tents*** on the market. Our Fumigating Tents hold the Gas and our Irrigating Hose hold the Water. Write for Catalogue No. 22.

San Francisco and Los Angeles Produce Markets

Los Angeles Markets

LOS ANGELES, Oct. 12, 1910.

Butter.

Extras have gone up a cent and a half since last week's quotations; other grades remain the same.

Price to trade 2½c in advance of the following Produce Exchange Quotations:

Extras	.35
Firsts	.32
Cooking	.25

Cheese.

Local	.18
Northern fresh	.17½@18
Oregon Daisy	.18½
Imported Swiss	.32
Domestic Swiss	.22@24

Eggs and Poultry.

No changes in egg market as yet, though market is strong and trending upward.

Paying price f. o. b.. L. A. is:

Local ranch candled	.45
Case count buying price	.41
Eastern fresh	.35
Eastern Storage	.32
Seconds	.27

Dealers pay for live poultry f. o. b. L. A.:

Hens, per lb.	.16@18
Roosters	.10
Spring 1½ to 2 lb.	.17
Turkeys	.24
Ducks	.16
Geese	.11
Squabs, per doz.	1.50

Live Stock.

The following quotations are f. o. b. Los Angeles, on all stock:

Hogs, 175 to 200 lbs.	9.25
Prime Steers	.5
Heifers	.4@4½
Calves, per lb.	.6½
Sheep ewes, per head, shorn	4.00@4.50
Lambs, per head	3.50
Wethers, shorn	4.00@4.50

Potatoes.

Wholesale prices are:

Local Burbanks, ctl	1.25
Highlands	1.15@1.50
Salinas	1.75
Sweets, Yellow, per ctl.	1.25@1.50

Onions.

Wholesale quotations:

Yellow Danvers	1.75
Australian Browns	1.75
Garlic	7@7½

Vegetables.

Wholesale quotations:

Asparagus	.15
Artichokes, northern, doz	1.00
Beets, sack	.93
Beans, green	.3@4
Beans, Limas	.4½
Brussels Sprouts	.8@10
Bell Peppers, lb.	.3@4
Green Chilis	.4@5
Chili's, Dried	.25
Cucumbers, per lug	.15@30
Cabbage, per sack	.75@90
Celery, crate	1.50@2.00
Cauliflower, doz.	.85@1.00
Carrots, per sack	.90
Egg Plant ,per lb.	.3@4
Green Corn, box	.35@50
Green Onions, per doz. bunches	.20@25
Lettuce, common, per crate	.50@75
Leeks, per doz.	.30
Okra, lb.	.2@8
Peas, per lb.	.5@7
Parsley, per doz. bunches	.25
Parsnips, doz. bunches	.20@25
Pumpkins, lb	.1@1½
Radishes, per doz. bunches	.15@20
Rhubarb, local	.75@1.10
Spearmint, doz. bunches	.30@35
Spinach, per doz.	.15
Hubbard Squash, lb.	.1½
Summer Squash	.25@35
Tomatoes, lug	.20@35
Turnips, sack	1.00
Water Cress, doz. bunches	.25@35

Citrus Fruits.

Valencias	4.00
Grapefruit	2.25@3.75
Lemons	4.00@5.00

Fresh Fruits.

Wholesale prices on the market are:

Alligator Pears	3.00@4.00
Apples, Bellflowers	1.00@1.10
Spitzenbergs	1.60
Jonathans, Utah	2.25@2.50
Greenings	.75@1.00
Pearmains	.80@1.25
Fall Pippins	1.00
Pineapples	.6@7
Casabas, doz.	1.50
Cantaloupes, crate	2.50
Figs, box	.75@100
Grapes, lug	.75@1.35
Grapes, Tokays	1.25@1.50
Pears, box	1.50@1.75
Bartletts	2.50@2.75
Strawberries	.10
Raspberries	.8
Blackberries	.8
Peaches, box	.75@1.00
Plums, crate	1.50
Quinces, lug	.90
Watermelons, lb	.1½@2

Dried Fruits.

Wholesale prices are:

Apricots	.12@14
Evap. apples, fy., per lb.	.8½@9½
Peaches	.7@8½
Pears	.10@12
Nectarines	.7½@9
Prunes	.6½@11
Plums	.10@11

Beans Dried.

Wholesale quotations:

Limas	5.00@5.25
Black eyes	5.00
Black eyes	5.50
Lady Washington	4.50
Small white	4.50
Garvanzas	4.50
Lentils	7.00

Nuts.

Wholesale quotations are:

No. 1 soft shell walnuts	.15
No. 1 H. S.	.14
No. 2, all kinds	.11

Grafted or budded an advance of 2½c.

Brazil nuts	.14
Filberts	.14
Almonds, IXL, per lb	.17@17½
Pecans, polished	.18
Peanuts, Eastern	.7@7½

Honey.

Wholesale quotations:

Extracted water white	.9
Extracted light amber	.8
Comb W. W.	.18
Light amber	.15
Beeswax	.30

Hay.

Buying prices f. o. b. cars L. A. are:

Barley hay	8.50@10.50
Alfalfa	9.00@10.00
Wheat hay	10.00@11.00
Tame oat	10.00@12.00

Grain.

Wholesale selling price f. o. b. Los Angeles:

Wheat, new, per ctl.	1.80@1.85
Corn	1.65
Popcorn	3.50
Kaffir corn	1.75
Egyptian corn	1.85
White oats	1.85
Seed Rye	2.00
Seed Barley	1.30

Feed Stuff

Wholesale selling price f. o. b., Los Angeles:

Cracked Corn	1.70
Cracked Wheat	1.95
Shorts	1.80
Bran	1.55
Oil cake meal	2.50
Feed Meal	1.75
Rolled Barley	1.15

San Francisco Markets

SAN FRANCISCO, Oct. 11, 1910.

Butter.

Butter has advanced steadily during the week. Firsts now stand at 36. Sellers hold firm on all grades.

The official quotations of the San Francisco Wholesale Dairy Produce Exchange for today are as follows:

California extras, per lb.	.36
California firsts	.32
California seconds	.29
Storage	.30½

Cheese.

California flats, new	.12½@17
Cal. Young Amer. fy. new	.15½@16½
Oregon, Fancy	.16½

Eggs and Poultry.

Eggs are selling freely at fractional advance on ranch extras

Official quotations of the S. F. Wholesale Dairy and Produce Ex. are:

Fresh ranch extras	.45½
Firsts	.42
Seconds	.30
Storage	.30
Hens, per dozen	5.00@10.00
Roosters, per doz.	5.00@8.50
Fryers, per doz.	5.00@6.00
Ducks	6.00@10.00
Broilers	3.00@4.00
Spring Turkeys	.26@28
Geese	2.00@3.00
Goslings, pr	2.00@3.00
Pigeons	1.50@2.25
Squabs	2.50@3.00

Live Stock.

San Francisco prices gross weight:

Steers	.3¾@5¼
Cows and heifers	.3@4½
Hogs	.6@9¼
Calves, per lb	.4½@6
Milk Lambs, unshorn	.6@6¼
Wethers No. 1	.4½
Ewes No. 1	.4@4¼

Potatoes.

Wholesale market quotations:

River White, new box	.65@90
Salinas Burbanks	1.45@1.60
Sweets, ctl.	2.00@2.10

Vegetables.

Wholesale quotations:

Artichokes	.25@40
Beans, string, per lb	.3@4
Beans, Lima, lb.	.3@4
Cucumbers, box	.35@50
Celery, per crate	.90@1.50
Chili Peppers, per box	.40@60
Bell Peppers	.6@7
Green Corn, sk	.75@1.25
Egg Plant, per box	.25@35
Lettuce, per crate	4.50@5.00
Okra, box	.40@50
Peas, per lb.	.6@7
Summer Squash, box 25 lbs.	.50@65
Tomatoes	.40@60
Garlic	.2½@3

Onions.

Onions, sk.	1.00@1.10

Citrus Fruits.

Valencias	2.50@4.00
Grapefruit	2.00@5.50
Lemons	2.50@5.50
Limes	6.50@7.00

Fresh Fruits.

Apples, box	.50@85
Apples, Gravensteins	1.00@1.25
Apples, Bellflowers	.90@1.00
Bananas, Hawaiian	.75@1.25
Cantaloupes, crate	1.25@1.75
Cranberries, Coos Bay, bx	$3.00@4.00
Cantaloupes	1.75@2.25
Nutmegs	.60@1.25
Figs, box single	.75@1.50
Grapes, seedless	.60@75
Grapes, Muscat	.40@65
Grapes, Tokays	.50@60
Grapes, wine, ton	8.00@15.00
Huckleberries, lb	.6@8
Pears, Winters	.50@85
Bartletts, wrapped	1.25@2.25
Peaches, lugs	1.25@1.50
Persimmons, box	1.00@1.25
Quinces, box	.50@85
Pomegranates, box	.75@1.25
Plums, crate	.90@1.15
Raspberries chst	5.00@6.00
Strawberries, chst.	3.50@5.00
Pineapples, doz.	1.00@3.00
Watermelons, per doz.	2.00@3.00

Dried Fruits.

1910 crop, f. o. b., carload lots, per lb: Apples, 7@8¼c; Apricots, 10¾@13¼c; do. Moorparks, 13½@14c; Peaches, 5½@7¼c, with a premium of ⅛@¼c on Muirs; Prunes, Santa Claras, 5½@6¼c, with ½@¾c premium on 40s; outsides 5⅜@6⅛c; Figs, 4¾@6½c for White and 4¼@4½c for Black; Pears, 9¾@13c.

RAISINS—1910 crop: London Layers, in 20-lb. bxs: 6-crown clusters, $2.25@2.50; do, 5-crown, $1.75@2.00; do 4-crown, $1.25@1.40; 3-crown layers, $1.05@1.15; do, 2-crown, 95c@$1.00. Seeded, per pkg.—Fancy, No. 16, 6@6¼c; Choice, No. 16, 5½@5¾c. Loose Muscatels in 50-lb. bxs—Standard, 4-crown, 5½@5¾; do, 3 crown, 4¾@5c; do, 2-crown, 4¼@4½c. Dried Grapes, 3@3¼c. Seedless—Muscatels, 3¾@4c; Sultanas, 4¾@5c; Thompsons, 5¼@5½c.

Nuts.

Walnuts, No. 1 soft shell	.15
Walnuts, No. 1 hard shell	.14½
Almonds, '10 N. P. U.	.14@14½
Almonds, '10 Nonp.	.16@16½
Almonds, '10 I X L	.15@15½
Almonds, Peerless	.13@13½
Pecans	.14@15
Chestnuts	.14@15

Beans Dried.

Limas	4.85
Pink	5.40
Black eyes	5.35@5.75
Small white	3.85
Large White	3.80@3.85
Kidneys	6.75@7.00
Garvanzas	3.25
Bayo	5.00
Horse beans	2.00
Red Mexicans	5.40
Cranberry	4.50@4.75

Hops

Hops, 1910 crop	.12@16
Hops, 1909 crop	.10@15

Honey.

W. W. Comb '10	.15
Dark Comb	.12½
Extracted W. W.	.8
Extracted, dark	.6½
Beeswax, per lb	.24@30

Hay.

Scott, Magner & Miller say:

There has come in to the San Francisco market during the week just past 5300 tons of hay. There has been considerable difficulty in most of the hay sections to obtain cars for loading. The market generally has a good, healthy tone. Hay prices are not higher than they have been, but good grades of horse hay have moved off a little better and more readily than heretofore. There has been very little fancy quality offering, and such consignments have been placed readily at top figures.

The demand for hay for shipment along the Coast and to the Hawaiian Islands has been fairly good, and considerable lately has moved out of the Golden Gate ,and it is expected that this trade will continue right along and relieve our market to some extent.

Alfalfa hay continues steady under heavy arrivals. The demand for this article has been decidedly brisk, and the arrivals have been readily taken care of on orders.

Fancy wheat	12.50@13.50
No. 1 wheat or wh and o	10.50@11.50
No. 2 wheat or wh and o	9.00@10.00
Choice tame oat	10.50@11.50
Other tame oat	8.00@9.50
Wild oat	8.00@9.00
Stock hay	5.50@6.50
Alfalfa	9.00@12.00
Straw	.40@50

Grain.

Wheat No. 1	1.50@1.57½
Barley, good to choice	.95@1.00
Barley, fancy	1.00@1.01¼
Barley, poor to fair	.90@92½
Oats, white	1.50@1.60
Rye, new crop	1.65@1.70
Corn, large yellow	1.55@1.60
Alfalfa seed	.14@15
Mustard brown	.4½
Millet	.3¾
Flaxseed	.5@5½
Broom corn seed, per ton	23.50

Feed Stuff.

Bran, per ton	27.00@30.00
Feed cornmeal, per ton	36.00@37.00
Cracked corn	36.00@37.00
Ground barley, per ton	22.50@25.00
Rolled oats, per ton	29.00@31.00
Middlings	32.00@35.00
Oil cake, per ton	40.00@41.50
Cocoanut cake per ton	25.00
Mixed feed, per ton	24.00@27.00
Shorts	29.00@32.00

Deciduous Market

SACRAMENTO, October 8th, 1910.

The following circular of the California Fruit Distributors gives number of cars of deciduous fruit shipped from all points in California for the week (7 days) ending Friday morning, October 7th, 1910:

Peaches.

One car. For the past six days there have been no shipments of peaches at all and it is expected that the one car, which left September 30th, will be the last car of this variety for the season of 1910.

Pears.

Fourteen cars. The last of the winter pears are now going forward and there will probably not be more than ten to fifteen cars in the state after this week.

Grapes.

Four hundred and fifty-eight cars. Movement of grapes this week compared with that of last week, when a total of 611 cars was reached, shows a material falling off. This will probably be true of the following week and it is expected that there will be a corresponding decline during that time. From present indications the next ten days will practically wind up Tokay shipments, after which there will be a few hundred cars of Emperors and Cornichons to move. All trace of rain damage has disappeared and remaining stock should show first-class keeping qualities.

Weather conditions continue favorable, being warm and pleasant, and at this time there is no indication of rain. The season has been a very favorable one for moving out the grape crop.

Citrus Market

LOS ANGELES, Oct. 12, 1910.

The Valencia market remains exceptionally strong in every section of the country, and the nearing of the close of the season shows that without qeustion every Valencia yet to ship will command the top of the market. Small prices will occasionally affect the local situation slightly, but on the whole a most satisfactory condition prevails.

Lemons still continue to command high prices, with very few foreigns arriving and fewer Californias available. For another month or possibly two this condition will continue, and every lemon which can be cut will command a satisfactory price.

Shipments.

Total shipments of citrus fruit to date since November 1st, 1909, 29,664 cars, of which 25,031 were oranges and 4.633 lemons. To same date last season, 37,493 cars, of which 31,434 were oranges and 6,064 lemons.

NEW YORK, Friday, Oct. 7.—Offerings today consisted of three cars oranges and one car mixed. Market steady on oranges, strong on lemons. Someclass, Stewart F. Co..........4.40

Lemons—Crown, fy., Sparr F. Co., 6.70; Crown, $6.40.

CHICAGO, Friday, Oct. 7.—Lemons remain steady and have a fair sale. Boxes, California choice, $4.75@5.00; extra choice, $5.50; common, $4.00@4.50.

Oranges, steady with offerings small. Grapefruit ruled easy. Boxes, late Valencia, extra choice, $4.25@4.50; choice, $3.75@4.00; grapefruit, Florida crate, $3.50@4.25.

CINCINNATI, Friday, Oct. 7.—Cool. Market declining. One car Valencias sold.

Valencias—El Capitan, S. A. Ex., $2.45.

PHILADELPHIA, Friday, Oct. 7.—Two cars Valencias sold.

VALENCIAS—	Avge.
Honest Pack, Tustin P. Co.	$4.55
Old Oak, choice, Tustin P. Co.	3.15
Pride of West, Pioneer F. Co.	2.50
Lucky Sd., Tustin P. Co.	3.60
Blue Banner, Pioneer F. Co.	3.15

ST. LOUIS, Friday, Oct. 7.—Cool. Market firm on good fruit. One car Valencias and one car lemons sold.

Valenvias—Searchlight, S. S. Orange, $3.45; Sunset, $3.05. Lemons—Al Azar, A. C. G., Azusa, $5.10; Red Shield, $5.65; Green Crown, $5.65.

BOSTON, Friday, Oct. 7.—One car sold. Cloudy, muggy. Market very strong and higher.

Valencias—Pointer A. C. G., Glendora, $4.45.

CLEVELAND, Monday, Oct. 10.—One car Valencias sold. Market higher. Cool, clear.

VALENCIAS—	Avge.
Robusta, AH, Pachappa	4.55
Robusta, marked "O"	3.45
Hobo, AH, Pachappa	3.10
Sekunda, AH, Pachappa	3.05

PITTSBURG, Monday, Oct. 10.—Two car sold. Market firm on good fruit. Cool.

VALENCIAS—	Avge.
Golden Strand	$2.20
Pride of West Pioneer F. Co.	2.75
Blue Banner Pioneer F. Co.	2.75

CINCINNATI, Monday, Oct. 10.—Cool. Market very strong on lemons. One car lemons sold.

LEMONS—	Avge.
Bridal Veil Limoneira Co.	$5.80
White Cross Limoneira Co.	5.70

BOSTON, Monday, Oct. 10.—Three cars sold. Weather fair, cool. Market very strong, higher.

VALENCIAS—	Avge.
Squirrel, AH, Prenda	$2.80
Planet, SS, Orange	4.80
Tunnel, ST, Fernando	6.45
Prairie Chicken, AH, Prenda	1.90
Rey, ST, Fernando	7.00

CHICAGO, Monday, Oct. 10.—Lemons, firm. Fair demand, but small offerings. Boxes, California choice, $5.50; extra choice, $6; common, $5.

Oranges—Quiet, demand and offerings limited. Boxes, late Valencias, extra choice, $4.25@4.50; choice, $3.25@3.75; grapefruit, Florida, crates, $3.55@4.25.

PHILADELPHIA, Monday, Oct. 10.—No sale of California citrus fruits at auction here today.

NEW YORK, Tuesday, Oct. 11.—The opening sale, which consisted of seven cars of Valencias, started with a very steady tone, which was inclined to turn into an upward tendency. If this cool weather continues present values will be well sustained and the probabilities are that good fruit will continue to advance until supplies from Porto Rico and Florida become more plentiful. At present California is the only source of supply and that supply is rapidly becoming more, limited. California growers should move whatever stock they now have on hand as the present market conditions are at their best and will continue only so long as the market remains free from the Florida and Porto Rican competition. After that values will begin to fluctuate and prices will suffer a decline which will be governed according to the law of supply and demand.

VALENCIAS—	Avge.
Aurora, Fy. Or., E. Peycke Co.	$4.60
Luna, Xc., E. Peycke Co.	3.75
Aurora, Fy. Or., E. Peycke Co.	4.40
Mars, Ed, E. Peycke Co.	2.90
Luna, Xc, E. Peycke Co.	3.00
Old Mission, Fy, Chapman	7.90
Old Mission, Ch, Chapman	7.20
Golden Eagle, Sd., Chapman	5.15
Lady Rowena, Chapman	3.65
Titus Ranch, Fy, San Marino, GPA.	4.75
El Toreador, Sd, San Marino, GPA.	3.40
Nonpareil, Covina Ex.	4.85
Red C, Covina Ex.	3.45
Signal, Xf., Stewart F. Co.	7.10
Mayflower, Fy, Stewart F. Co.	5.60
Pilgrim, Fy, Stewart F. Co.	5.20
Buena, Sd, Stewart F. Co.	4.75

NEW YORK, Monday, Oct. 10.—Five cars were sold. The market was stronger. The weather was clear and favorable.

Scepter, SS. Ex.	$7.05
Planet, SS. Ex.	5.45
Red C., Covina Ex.	4.05
Cougar, Covina Ex.	4.00
Golden Cross, Covina Ex.	4.80
Red X.	4.15
Aurora, Fy., Or., E. Peycke Co.	5.30
Luna, Ec., E. Peycke Co.	4.05
Tustin Gem, Tustin P. Co.	5.00
Old Oak, Ch., Tustin P. Co.	3.95
Honest Pack, Tustin P. Co.	3.75

CHICAGO, Tuesday Oct. 11.—Lemons—Firm market exists. Demand is fair and there is only a very limited supply. Boxes, California choice, $5.50; extra choice, $6.00; common, $5.00.

Oranges—Demand is tame and there are only light offerings. The market continues steady. Boxes, late Valencias, extra choice, $4.25@4.50; choice, $3.25@3.75; grapefruit, Florida, crates, $3.50@4.25.

BOSTON, Tuesday, Oct. 11.—One car sold. Favorable. Market steady.

Valencias—Squirrel, $2.90; AH., Prenda, $2.90.

PITTSBURG, Tuesday, Oct. 11.—One car sold. Favorable. Market firm on good oranges.

Valencias—Bear, OK. Ex., $3.95.

The up-to-date farmer is a live wire, and nowhere does he display greater business sense and foresight than in continually increasing his working farm capital represented by improved machinery.

Commission houses always prefer clean eggs to those that are soiled, and will pay a larger price for them, because they are more salable.

Fowls while moulting are in a debilitated condition hence should be given extra care and a nitrogenous ration. Especially should they have access to green food.

Constant care and attention is the least we can bestow on our poultry with any prospect of success. The illusion that some things may be slighted is the bane of prosperity. What is worth doing at all is worth doing well. A single mishap may ruin all calculations for a whole season. Don't be afraid to be called fussy by your neighbors. They will leave off the term when they see results.

SPREAD OF THE ORANGE GROVES.

In four decades, Southern California has been transformed from a land of cattle ranges to one of orange groves. In a third of a century the citrus industry has grown from a single carload shipment to thirty-eight thousand. Of the twenty million boxes of oranges annually consumed in the United States, California supplies twelve million five hundred thousand. The receipts from the citrus crop for the season of 1908-9 were over $30,000,000.—J. M. Quinn, in the October Pacific Monthly.

For success animal food in some form is a necessity. Try the experiment of feeding two yarded flocks, eliminating animal food from the ration of one flock, and note results. More eggs from the flock that has had meat in some form will be a sure result.

How to come to California

COLONIST TICKETS Will be on sale October 1st to 15th.
Send for the Old Folks at Home.
Have them bring All their Friends.

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with any Southern Pacific Agent and a ticket will be furnished your friends in the East without any inconvenience to you.

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Missouri River Points	25.00
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Highest Efficiency. Lowest Cost for Operation. No Cost for Extras.
Ames Pumps Run for Years. Write for Catalog.
A. T. Ames Manufacturing Co. - Niles, California

See the bride.
See the grad-u-ate.
What is the dif-fer-ence be-tween the bride and the grad-u-ate?
The bride wants to go home to moth-er and the grad-u-ate does not.
—Harper's Bazar.

Philanthropic Lady—You ought to be ashamed of yourself to be making fun of a smaller boy because he cries when the doctor hurts him. Did you never have your own feelings lacerated? Smart Boy—Les, mum, but it didn't take.—Baltimore American.

Allow the poultry to have the run of the barn, stables and other buildings during the day, but have grain and other feeds covered so they will not damage them. Do not allow them to roost in the barn, but provide a good house for them.

The Western Engine

Will keep right on
Pumping
Pumping
Pumping
YEAR IN AND YEAR OUT.

Using least fuel
Requiring fewest repairs
Lifting most water

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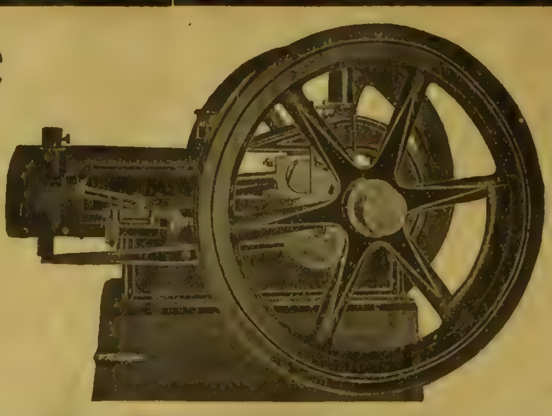

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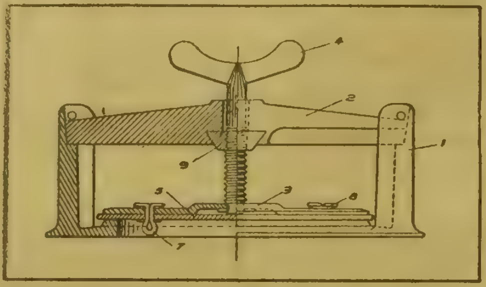
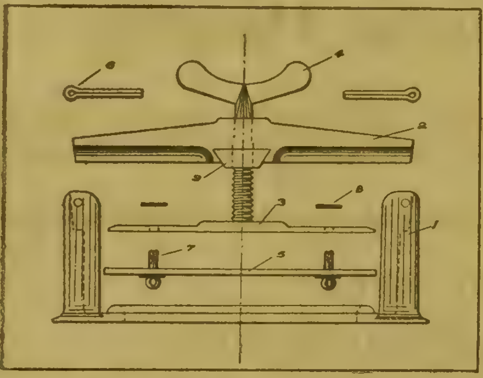
POMONA CIRCULAR VALVE





THE main object of the Pomona Valve is to construct a very cheap and simple valve, and one that requires no special tools or wrenches or experience to operate.

The Pomona Valve is constructed with non-corrosive parts, thus insuring a workable valve regardless of infrequent use. All fastening held in place by cotter pins, thereby making a very cheaply constructed valve and yet a very substantial one.

Valve Parts
1 Frame
2 Cross Bar
3 Top or Lid
4 Brass Thumb Screw
5 Gasket
6 Cotter Pin
7 Cotter Pin
8 Cotter Pin Washer
9 Brass Nut

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POMONA MANUFACTURING CO.
POMONA, CALIFORNIA

Irrigate your alfalfa land with the

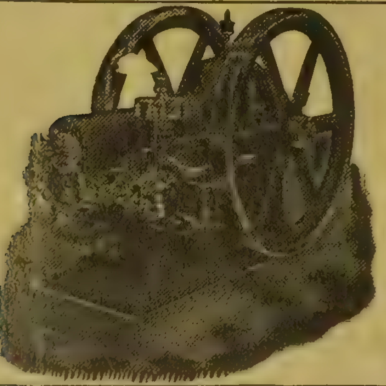
KT Portable Hydrant

Practical for steel, vitrified or cement pipes.

Controls flow of water. You need not get yourself wet.

Alfalfa growers like it. We have other devices for irrigation work. Write for "Brown Book."

The Kellar-Thomason Mfg. Co.
COVINA, Los Angeles County, Cal.



Another New Gas Engine

Is amongst us and if you are in need of power you should investigate this one. You will find that it possesses the most desirable features of all the old timers and the price is right. Plenty of catalogues for distribution.

Henshaw-Bulkley & Co.
262-264 So. Los Angeles St., Los Angeles

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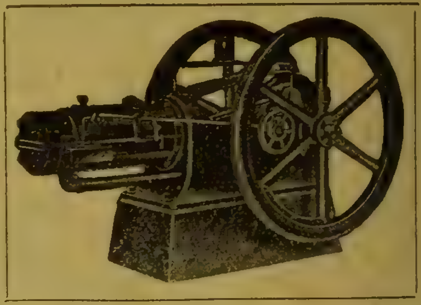

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The
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It is self-contained and built by practical experience to meet the demands of the fruit growers. Write for particulars.

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California Cultivator

An Illustrated Weekly Magazine, Devoted to the Rural Home and Ranch. One Dollar per Year.

Los Angeles October 20, 1910 San Francisco

THE PIGEON FARM OF A HUNDRED THOUSAND SQUABS

The Greatest Pigeon Squab Farm in the World.

A SHOW FEATURE OF SOUTHERN CALIFORNIA.

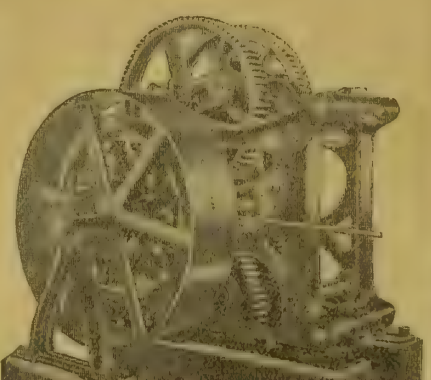
Los Angeles is distinguished for something more than climate and tourists; among the lesser attractions is her possession of the largest pigeon squab breeding farm in this country—an enterprise that not only represents a considerable investment, but one which "makes for business" in a community that boasts of more than one line of industry peculiarly its own. The Johnson Squab Farm is situated just north of the town in the bottom of the Los Angeles river, close to where the Arroyo Seco debouches into it. The number of birds bred annually runs upward of a hundred thousand. Marketing is done daily. The consumption of feed also goes up into the hundreds of tons annually, averaging two tons a day. The business has been exceptionally profitable ever since its founding, now some twelve years ago.

Among professional squab breeders the Homing pigeon easily occupies first place. It is alert, erect of carriage, bright eyed, full breasted, square shouldered, large throated and a good feeder—all characteristics of first importance in pigeon squab farming. In addition it is active, prolific and of good constitutional vigor.

Among breeders the claim is often made that one pair of pigeons will produce from 10 to 12 pairs of squabs each year. In newspaper vernacular this would be important if true; but the facts are that on an average the number will go from six to nine pairs. The prices for squabs vary more or less in different markets, a fair average being from $3.00 to $4.00 per dozen.

Squabs should be marketed with empty crops. In the harvesting of the birds all those of suitable size are taken from the nest and placed in a hamper. Water being available, the operator has the hamper at his side, and a suspended iron ring by a cord to which four strings of the desired length are attached. A bird is taken from the hamper, the noose slipped around both feet with both wings crossed over the feet. The picker then inserts the blade of the killing knife into the roof of the mouth, piercing the brain, and drawing it forward severing the arteries of the head. First the lower half of the breast is picked, then the upper half, next the back of the bird, and last the wing feathers. This rough picking is followed by a second going over the carcass with a small knife, removing all the pin feathers. When finished the squab is dropped into cold water to remove all animal heat, and it is ready for market.

The Smooth Running Pomona Deep Well Pump



RELIABILITY.

Has passed through another most successful season's run, this being the fifth since starting.

There is no experiment in buying a POMONA PUMP. All the parts have been tried out and fully perfected. They will do the work, we know, and do it well.

We have records of plants that have made three seasons' run without one cent for repairs of any kind.

ECONOMY.

May be driven by a steam engine, gas engine or electric motor and in any case will give you the cheapest water and pay dividends on your stock.

Any Water Company going into the Irrigation business will run no chances in buying the POMONA PUMP. They are built heavy and strong. All the wearing parts are Bronze Bushed or Babbited and will last a life-time with the smallest outlay for repairs.

We can refer you to customers who are operating their POMONA PUMPS for less than one-half cent per inch per hour on 200 feet lift. This is less than half what their water costs with other pumps. The same make of engine being used in both cases.

Send for illustrated catalogue to—

POMONA MANUFACTURING CO.

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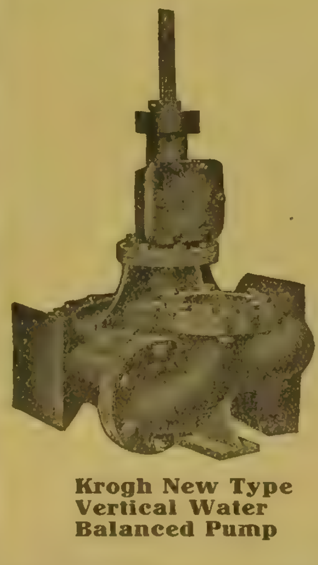
This is the latest in

SLIDE GATES

The only one of its kind. Must be used to be appreciated. It has no equal. Notice the notches on the side of the frame. They are what holds the slide at any position. Cannot slip down without turning the handle. Just what every irrigator needs. Ask for our "Brown Book." Don't fail to see this space next week.

The Kellar-Thomason Mfg. Co.

COVINA, Los Angeles County, California



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Pump has Water Sealed Gland, Enclosed Balanced Impellor. Will not cut out by sand. Can be placed in a smaller pit than any other pump. Our Bulletin, C12, tells all about it. We have a permanent branch house at

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The pump can be seen in operation at our place of business

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Phones: Sunset, 8x4. Home, Red 31, or
L. C. Rice, Tropico, Cal.
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Soon save their cost. Make every wagon a spring wagon, therefore fruit, vegetables, eggs, etc., bring more money. Ask for special proposition. Harvey Spring Co., 737,17th St., Racine, Wis.

FREE TRIAL TO YOU

SPECIAL NOTICE TO MELON GROWERS

Plant your cover crop now and double your yield of melons. Sow

Vetch, Fenugreek, Canadian Field Peas, Burr Clover

If you are in the market for any of the above for cover crop, write us for prices, stating quantity, and we will make you close prices.

We also have several tons of small Yorkshire Hero peas that we screened out of our seed stock which we are offering at $3.00 per cwt. If you would sow them in your orchard you could harvest a crop of green peas and get a fancy price in the San Francisco market and also fertilize the orchard.

Now is the time to plant onion and cabbage seed. We can furnish them in any quantity.

Aggeler & Musser Seed Company

113-115 N. Main St. ***Los Angeles, California***

Stop *Bruising* Fruit and *Losing* Money.

Every time your clippers pierce an orange's skin you open the way to decay. Usually the cut is too small to *notice*—and the bruised one is crated with the good. *You* know that *one decaying orange may spoil an entire crate*—you lose just that much money. You *won't* bruise fruit if you use

WISS ORANGE CLIPPERS

United States Government Experts and leading citrus growers everywhere endorse Wiss Orange Clippers because they *know by experience* Wiss Clippers *last longest, do best work* and *save money* by *minimizing* the liability of bruising the fruit.

The blades are specially curved and ground—the points and outer edges are smoothened and rounded to avoid bruising. Handles are shaped to prevent tiring of the hand. Wiss Orange Clippers will give years of service — and are unrestrictedly guaranteed to give satisfaction. *For sale by all dealers.*

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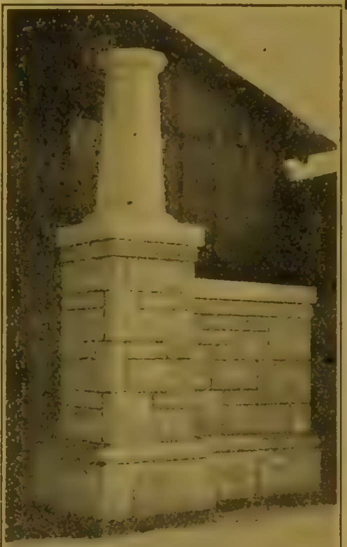

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Cheap but Durable

If you are thinking of a small pumping plant to take the place of a windmill, watch this space next week. It will pay you to wait.

RHODES DOUBLE CUT PRUNING SHEAR

Pat'd June 2, 1903.

THE only pruner made that cuts from both sides of the limb and does not bruise the bark. Made in all styles and sizes. We pay Express charges on all orders. Write for circular and prices.

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RHODES MFG. CO.,
GRAND RAPIDS, MICH.

California Cultivator

Vol. XXXV—No. 16 Los Angeles, California, Thursday, October 20, 1910 Subscription $1 a Year

Awards and Premiums at Watsonville Apple Annual

CLOSE COMPETITION MAKES CONTESTS INTERESTING

The Watsonville Apple Show closed as it had opened, with greatest praise of all who saw it. Three days of the mid-week of the show brought a very great disappointment in a continued downpour of rain. This not only kept away the vast throngs who would have added to the value of the show, but destroyed decorations along the streets, and through leaking of the tents in which the greater part of the exhibits were, destroyed their beauty. Several of the entries in the car-lot class were so soaked that repacking was necessary. Notwithstanding the rain, the attendance, especially in the evenings, was good, and excepting as to financial returns, the greatest of satisfaction prevailed. The most valuable asset secured from the effort is the advertising and the inspiration to produce and pack finer fruit. People visited the show from many parts of the East, one trainload of bankers stopping to take a look in. Of course fruit growers from all parts of California were in attendance. Oregon apple men were conspicuous by their absence and many references were heard to the statement of the Portland Oregonian that all Pajaro Valley had on which to produce apples was a strip of sand and a few scraggly trees irrigated with dish water from the kitchens of the Valley. Governor Gillett expressed regret in his opening remarks that the author of the editorial in the Portland Oregonian could not be present to inspect the exhibits.

The success of the effort will mean that the exhibition will remain true to name, that is, it will be an "Apple Annual." Heartiest appreciation was expressed for President Stoesser's efforts and those of the board of nine directors who gave of their time and money in greater measure than any others in the city to bring about this complete success. Notwithstanding the disappointment caused by the storm, it is probable another season will see a still bigger show. It is possible it will be held earlier for two reasons; first, on account of the greater probability of settled weather, and second, as expressed by Judge Rowe, it would have greater advertising value from the standpoint of the fruit seller. He referred to the fact that Eastern fruit shows had learned the lesson of holding exhibitions at the very opening of the shipping season. This gives opportunity for the larger buyers to visit and inspect the quality of the fruit and place orders for the entire season. These points will be considered by the future board of directors.

Naming the Winners.

It seemed a near tragedy, the naming of the grand sweepstakes winner in the carlot class. Fourteen cars had been eliminated through the careful score-card system of the judges. Of the two between which the final choice lay one was a superb bunch of 600 boxes of Sebastopol Spitzenbergs, the other a mixed car of Watsonville Bellflowers, Red Pearmains and Newtowns entered by Alaga Bros. of Watsonville. Sonoma county, two hundred miles to the north, or the home county of Santa Cruz, which would win? The footings on the cards showed the mixed car of Alaga Bros. to have the magnificent score of 93 points, the footing of the Spitzenbergs of the Sebastopol Apple Show Association to have just one-third of one point less. It developed that had there been one defective apple less in the Sebastopol car and in its place a perfect apple, the silver cup, two gold medals and $250 in coin and all kinds of honor would have been Sebastopol's.

Messrs. Newcomb, Swan and Hotle of the Sebastopol committee were broken hearted, but the figures wouldn't lie and they took their medicine like men.

THE APPLE SCORE CARD.

100 a perfect score.

The Judges allowing 75 for perfect fruit.

10 for uniform size.

10 for color.

5 for pack.

Score off 5 points for each wormy apple.

Score off 1 point for any other imperfect scab or scale on apple.

Score off 1 point for loose pack.

Score off 1 point for lack of perfect pack.

The judges placing the awards in the above and all quality classes were Geo. E. Rowe, presiding judge, editor of Fruit Belt, Grand Rapids, Mich.; Geo. C. Roeding, nurseryman, Fresno; Mr. Levy, fruit buyer, San Francisco.

Other Carlot Winners.

Best car Newtown Pippins, M. N. Lettunich.

Bellflowers, MacDonald & Sons.

Red Pearmains, L. P. Cikuth.

White Winter Pearmains, Loma Fruit Co.

Langfords, Frank Radovan.

Spitzenbergs, Sebastopol Apple Show Association of Sebastopol, Sonoma Co.

Mixed Car, Alaga Bros.

Feature Exhibits.

J. A. Filcher of the State Board of Agriculture judged the feature exhibits. The awards were:

1. San Monte Fruit Co. The Kiss of the Oceans, a great reproduction of the Western Hemisphere in apples.
2. Japanese Association. Battleship Pajaro.
3. Watsonville High School. High School Building.
4. MacDonald & Sons. American Flag in apples.
5. Loma Fruit Company. Windmill.
6. Order of Eagles. Eagle.

Other features were given honorable mention and Mr. Filcher wished particularly to refer to the "Apple Transformer" of the Sebastopol Association. He made no award to it because of the fact that it is not constructed of apples.

He further stated: "In comparing and estimating the merits of these exhibits as special features, the quality of the fruit used in executing the designs was not taken into consideration."

Individual Prizes.

The remaining awards, consisting chiefly of individual exhibits, are as follows:

The Sebastopol Gravenstein Association's ten box display of Gravensteins received the sweepstakes prize of the gold cup offered by the lawyers of this city and was among the following awards which were announced yesterday by the judges of exhibits at the apple annual who have finished their work upon the ten box lots.

The balance of the awards were: Best ten boxes Bellflowers, first $50 cash, Watsonville Band and gold medal to L. W. Hardy and second prize of silver medal to S. J. Duckworth; best 10 boxes Newtown Pippins, first $50 cash by Watsonville Savings Bank and gold medal to J. D. Copeland, whose exhibit made a perfect score of 100; second prize silver medal to Sebastopol Gravenstein Association; best ten boxes Winesaps, first prize gold medal to Lettunich Bros. and second prize of silver medal to M. V. Quick; best ten boxes Kansas Beauties, first gold medals to Dr. C. E. Beebee of Woodland whose exhibit was the only one in its class; best ten boxes Jonathans, first gold medal to Sebastopol Association, whose exhibit made a perfect score of 100, second prize silver medal to C. L. Robertson; best ten boxes of White Winter Pearmains, first gold medal to S .J. Duckworth who scored 100; second silver medal to G. F. Gallagher; best ten boxes Hoovers, first gold medal to Sebastopol Association whose exhibit was the only one in its class; best ten boxes of Baldwins, first 25 pounds Arsenate of Lead offered by California Spray Chemical Co. and gold medal to Mitchell & Goodall, second silver medal to Sebastopol Association ten boxes of Gravensteins, first gold medal to Sebastopol Association which exhibited the only display of its class and scored 100; best ten boxes of Spitzenbergs, first gold medal to California Fruit Packing Co., second to Sebastopol Association; best ten box exhibit of Red Pearmains, first gold medal to A. Scurich Co., second silver medal to Mitchell & Goodall; best ten boxes of Langford Seedlings, first 25 pounds Rex arsenate of lead offered by Rex Spray Co. of Benicia and gold medal to Mitchell & Goodall; second silver medal to Frank Radovan; best ten boxes Winter Bananas, first gold medal to Mitchell and Goodall whose exhibit was the only one in its class; best ten boxes Smith Ciders, first and only award to M. V. Quick of gold medal; best ten boxes Rome Beauties, first gold medal to R. E. Sherman of Eldorado county whose exhibit was the only one in its class and scored 100; best ten boxes Wagners, first and only award to Sebastopol Association, gold medal; best ten boxes Ben Davis, first gold medal to J. E. Hassler; best ten boxes Missouri Pippins, first gold medal to M. N. Lettunich Co.; best ten boxes Arkansas Blacks, first gold medal to only entry, Sebastopol Association; best ten boxes of mixed varieties, first silver trophy cup offered by Adriatic Publishing Co. of San Francisco, one barrel Ortho Lime Sulphur Solution by California Spray Co. and gold medal to Sebastopol Association who scored 100; second silver medal to Ira J. Phillips.

For the best exhibit of apples made by any exhibitor residing more than 100 miles from this city the Sebastopol Association was awarded $25. For the best ten boxes of red apples from any district outside Santa Cruz and Monterey counties R. E. Sherman of Eldorado county was awarded $10.

Box-Making Contest.

For the closing evening of October 15 the first world's championship box-making contest ever held was witnessed in the pavilion. It lasted one hour and Homer Poore of the San Monte Fruit Company was the winner, having put together and fully nailed ninety-three apple boxes in sixty minutes. The contestants and their scores were:

Homer Poore, San Monte Fruit Company, 93; T. Corrison, 87; Paul Johnston of Soquel, 81; Harry Taylor, MacDonald & Sons, 80; Peter Fisher, Frank Radovan Company, 76; Hugh McGowen, M. N. Lettunich Company, 74; Archie Bloom, San Monte Fruit Company, 71; B. P. Eastabrook, 67; Charles Cullinson, 61; Ben Church, 60.

The judges were C. R. Greison of Hood River, Ore., who is assistant editor of Better Fruit; J. W. Turner of Sebastopol and C. E. Hotle of Sebastopol.

As Seen by the Judges.

Mr. Levy said he had never seen equal quality and quantity of apples brought together in such an exhibition. His life has been spent in handling fruits, of which a large percentage has been apples, and he was unqualified in his praise of the uniformly good fruit. He, however, deplored the fact that some inferior fruit was used in the feature exhibits. These were not entered on a quality basis, but notwithstanding that the fact was adversely commented upon that every one of the feature exhibits showed inferior fruit, and not only showed it but gave it prominent place. The High School exhibit may be referred to as illustrating this point. The roof was constructed of Red Pearmains and was entirely of cull fruit. They answered well enough for a tile roof imitation but in an apple show in an apple country such a grade of fruit should not be used.

Mr. Geo. E. Rowe of Grand Rapids, Michigan, who has judged similar exhibits for years—in fact, he told the writer that he averaged about five similar exhibits annually—remarked that he had never seen an exhibit of apples which would come up to this one. The carlot entries were an entirely new feature in his experience, the ten-box and plate exhibits being the more general form in the Eastern fairs. While Mr. Rowe had a criticism for some of the entries, he felt that the general standard should be raised, yet the exhibit was really remarkable as made. In fact, that is one thing which will be accomplished by the competition.

Apple Annual Notes.

The number of varieties exhibited was a conundrum, for there was no record keps as to this point. One exhibit, that of Tuolumne county, and one of the smaller ones at that, showed on actual count 52 varieties on plates. Guesses as to number of varieties vary from 30 to 150.

One of the handsomest little exhibits was that of Tuolumne county. One Pajaro Valley grower was asked if he had seen it. He quickly replied, "I haven't seen anything else." The apples were of magnificent color, perfect in form, and crisp and delicious of flavor. If Tuolumne has any great acreage of land adapted to growing similar fruit, she will be heard from with a louder voice than at this exhibition.

Apples are usually packed in boxes 9¾x11x22. Some packers prefer to put their 3½ tiers in a special box, 8¾x12x22. This contains practically the same number of pounds of fruit while allowing a more attractive pack of the large apples. The 4-tier apple is one which fills a ring 2⅝ inches in diameter.

TREES

"Jock, when ye hae naething else to do, ye may be aye sticking in a tree; it will be growing, Jock, when ye're sleeping." —Sir Walter Scott, in the Heart of Midlothian.

The rainy season has begun and with it comes the thought of tree planting.

Every prospective planter of trees or vines should have

California Horticulture

The Fruit Growers' Guide

By Geo. C. Roeding

120 pages, 7¾ by 10¾. Beautiful lithographed cover. Profusely illustrated with half-tone engravings and color plates. It not only lists but describes 2000 varieties of trees and plants. Contains valuable suggestions on soil, preparation, planting, cultivating, irrigating and pruning. Price, mailed, 25 cents.

For more than 25 years we have been growing nursery stock in this state, and we believe you will find that our experience and suggestions will be of value to you.

Plant Fancher Creek Nursery True-to-Name Trees

And you will have nothing to regret.

Our nursery embraces over 1500 acres, located in the most fertile and favorable spots in all California for the propagating and growing of first-class nursery stock of every description.

Deciduous, citrus, ornamental trees, grape vines, palms and roses.

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Box 12 Fresno, California, U.S.A.

Citrus and Tropical Fruits

MITES, OR SO-CALLED SPIDERS, AFFECTING CITRUS.

By A. W. Morrill, Entomologist, Arizona Horticultural Commission.

The three pests which are discussed in this circular are commonly called the rust or silver mite, the six-spotted spider and the red spider. It is probable, as will be shown, that citrus growers in Arizona have more reason to fear the introduction and successful establishment of these pests than any others.

All three pests are mites, strictly speaking, and not spiders, although the Acarina, or mites, are more closely related to spiders than they are to true insects. They are all prevalent in Florida, no section of that state being immune to their injury. They were introduced into California about twenty years ago on nursery stock, the rust or silver mite being reported from San Diego county only, while the red spider and the six-spotted spider are known to occur in San Diego, Orange, Los Angeles and Ventura counties.

The name "rust mite" is used in Florida where the principal injury of the pest is in giving the rind of the oranges a russet appearance. To avoid this injury many of the best growers spray their groves from three to five times a year. Others consider that the russetting does not affect the selling value of their fruit. In California the same pest is known as the "silver mite," on account of its injury to the rind of the lemon. The injury to lemons is much more serious than to the orange, silvered lemons being unsalable.

The rust or silver mite is so minute as to be almost invisible to the naked eye, full-grown specimens measuring about one two-hundredths of an inch in length. More than 1,000 specimens of the mites and their eggs were counted by one investigator in a square inch of leaf surface. Direct sunlight is unfavorable to these pests and the same holds true of dense shade. Half shade, however, favors their multiplication. Practically nothing definite is known at present concerning the effect of climatic conditions upon the rust or silver mite. A close relative, the pear leaf blister mite, was observed by Prof. T. D. A. Cockerell at Tempe and Mesa, Arizona, on pears several years ago. In Bulletin 32 of the Arizona Agricultural Experiment Station he states that the mite did not appear to cause any injury.

The six-spotted spider ranks high as a citrus pest in Florida. This mite feeds upon the leaves, causing them to turn yellow and fall. The writer has seen trees in Florida shed fully 60 per cent of their leaves from injury caused by this pest. The amount of damage varies from year to year, depending upon climatic conditions. The mite requires hot, dry weather in order to thrive best, and in Florida it usually accompanies spring drouths, quickly disappearing with the beginning of the summer rains. The evidence at hand shows that this mite would probably prove a serious pest in a dry climate, if it should become established.

The red spider is closely related to the six-spotted spider. The former species seems to be more destructive in California than in Florida. Within the past month the entomologist of the commission inspected a sample shipment of citrus trees from a reliable Florida nursery, bearing a certificate of fumigation with hydrocyanic acid gas. These trees were more heavily infested with living red spiders, in all stages, than in any case previously seen. It was estimated that there were upwards of 2,000 eggs and crawling mites of different sizes on each tree. Like the six-spotted species, the red-spider is favored by dry weather. It is therefore considered inadvisable for our citrus growers to risk acquiring definite information concerning its ability to thrive here.

Natural enemies do not play an important part in the control of the mites here dealt with. Neither fumigation nor sprays with the oil and soap washes have been found to be effective against them, on account of the resistance of the eggs to these remedies. Sulphur in dry form or in solution is a substance to which mites are peculiarly susceptible, and dusting or spraying with sulphur mixtures or solutions is relied upon for their control. The eggs are not affected, but the sulphur remains on the leaves where the young mites, as they hatch, may come under the influence of the fumes which are slowly generated by chemical changes.

INFLUENCE OF EARTHWORMS

The food of earthworms is humus matter; to obtain this, they have to assimilate large quantities of earth which is obtained from the subsoil, and contains, generally, only about one per cent. or less of humus. The earth, while passing through the alimentary canal of the worm, is subjected to the action of its digestive juices, which dissolve out the humus and render the mineral particles more soluble to the carbonic acid water of the soil. It is then excreted at the surface of the ground during or after rain.

Darwin calculated from actual observation that in humid climates, in a soil fairly stocked with these worms, the earth thus brought up may amount to from one-tenth to two-tenths of an inch annually over the entire surface. He further estimated that in this manner ten tons of dry earth, per acre, annually pass through the bodies of earthworms and are brought to the surface.

Apart from the mechanical effect worms achieve in loosening the soil, the entering of air and water in their burrows, and the chemical effects arising from the digestive process and the final return of their own substance to the soil are of great value. Their habit of drawing after themselves leafstalks, blades of grass, and other vegetable remains into their burrows, is another means of improving both the physical and the chemical properties of land. The uniformity, lack of structure, and loose texture of the surface soil, especially of forests as compared with subsoil layers of corresponding thickness, is doubtless largely due to the work of worms.

Another important point is that, in soil thrown up by earthworms, the humus formed under their influence is always of a neutral character and never acid. The work of earthworms is especially effective in loamy soils and in humid regions. In the arid regions of the earth, and in sandy soils generally, the life conditions are unfavorable to the worms, and the perviousness elsewhere brought about by their labors already exists naturally in most cases.

It is stated by Mr. E. T. Seton (Century Magazine, June, 1904) that the earthworm is practically non-existent in the arid regions between the Rocky Mountains and the immediate Pacific Coast from Manitoba to Texas. In the Pacific Coast region, however, it is abundant, and does its work effectively.

It has been calculated that an acre of ordinary agricultural land contains about 50,000 earthworms. The effect of their combined labors in reducing the soil to a finer condition, as we have seen, is great, while they also enrich the surface soil in nitrogen. In old pastures, the production of a close, compact sward is largely due to the fine earth which is brought to the surface by earthworms, to be afterwards crumbled down and leveled by the action of wind and sun.

When the earthworm casts are being constantly swept up and carried away from lawns, cricket grounds, and putting-greens, the surface soil gradually becomes exhausted of fertility, the grasses die out, and mosses take their place.—The Gardeners' Chronicle.

WHITE CANADIAN
Peas
Eastern Grown
Best There Is
For Cover Crop
Carload just in. Write for sample and price, stating quantity wanted.
West Coast Seed Co.
111-113 Winston St., Los Angeles
Between 4th and 5th St. near Main

Rex Lime and Sulphur Solution
The Famous Fruit Tree Spray and Animal Dip

This Spray has been sold throughout the United States more than any other spray in use, and the demand for same is constantly increasing.

Peach and plum trees should be sprayed early in the fall as soon as the leaves drop and again in the spring just before the buds open. Also

Rex Arsenate of Lead
and
Rex Sulphide of Arsenic

are supplied by us for all leaf eating insects.
Call on your dealer or address:
California Rex Spray Company
Benicia, California

Citrus Trees
(*Exclusively*)

Buy now and it pays to buy the best. We offer a complete, clean, vigorous stock which, we think, are as good as can be grown.

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Tree and Shrub Fruits

THE TILTON APRICOT.

Six years ago last spring I bought 650 Tilton cot trees which I planted on part of the lightest soil on my farm near Hanford, took care of them, plowing them as often as needed, not less than four times and part of them several times, the first year, so as to kill the Johnson grass, and the trees made a very fine showing. I ran water just along the rows as soon as planting was done. That was six years ago last spring, and last July, one year ago, after I had taken off the crop of fruit, I turned in and irrigated the 648 trees, there being just six acres of trees, 20x20. This is the only time I have irrigated these trees since they were first planted. In 1908 I harvested my first cot crop, the trees were four years old. They produced that year 19,447 pounds, sold at 6⅜ cents per pound, bringing $1,239.75. I sold 50 pounds to one of my friends for 7 cents, $3.50, and the pits I sold for $21.80, making a total from four-year-old trees of just $1,265.05 or $210.84 per acre. In 1909 I received from this same six acres $2,257.40 or $376.24 per acre. This year, 1910, I received $1898 or $316.33 per acre. There were just 2179 fifty-pound boxes of apricots cut, at the price of 8½ cents dried. This gives a total for these Tilton cot trees, the first three years of their bearing, of $903.44 per acre. I find that this variety of cots can be handled with the slightest loss of any other cot, it being of a very dry quality. I also found by actual shipment that these cots can be picked from the trees just as you would pick for drying, wrap them in paper, place them in a 25 or 50-pound box such as is used for picking, place them in an express car, ship them to Denver, Colo., or to Topeka, Kansas, without using any ice and they will go through as fine as silk. I tried it this time while I was in Denver and Topeka keeping on ice for one week. I could have sold my entire crop of fresh cots in Denver at a fancy price had I been ready to have taken care of them. I have had these cots to drop off the tree and remain firm for three days, and I have had them remain in the picking box (50 pounders at that) for three and four days after they had been picked. In conclusion, I would say this is the only cot to plant to compete with time. It dries heavy, it is just like wax when cured properly, and it is a beauty in every way. —S J. White, in Hanford Journal.

SHIPPING FRESH FIGS.

A news item from Dinuba gives a pretty good idea of what the future may have in store for the farmer who has this delicious fruit for sale. We learn that Superintendent Rixford, of the Chico Agricultural Experiment Station, recently came to Dinuba to investigate the matter of the shipping of Calimyrna figs from here to the Chicago market. Recently W. D. Smith of Dinuba sent a lot of figs in a car of grapes, and these were sold in the Chicago market for more than 25 cents per pound, netting 21 cents per pound. That Calimyrna figs should be made to reach the eastern markets in good condition was formerly thought to be out of the question, and that Mr. Smith succeeded in shipping by freight attracted the attention of the fig expert of the government station. The latter has sent a large number of fig-cuttings here to Mr. Smith and adds that there is a great future for the fig industry.

APPLE UTILITY AND BEAUTY.

Pruning when tree or plant is in dormant condition tends to stimulate new and rapid wood growth, which is desirable in young trees, while to prune in the early summer season, when a tree is in full vigor of growth, checks wood growth and tends to fruitfulness. Therefore, as a general proposition, trim young apple trees in late February or March when dormant.

It is quite a fad just now to talk about planting dwarf apple trees, especially for the home supply of fruit. I, however, am clearly of the opinion that if the best of standard trees are started with low heads and annually pruned when in dormant condition, with the thought of developing a low, broad, spreading tree, and when this tree has attained a height of not more than ten or twelve feet the after pruning be done in summer, so as to check any further wood growth, you will have a tree which may be had about as easily as dwarfs, and one many times more productive. This at least is to be my practice on nearly three hundred acres of apple orchards on the rocky hill lands of Connecticut, where I am trying to grow fine table apples for the high-class family trade that demands beauty as well as quality, and I want my trees low down where we can easily get at them, in order to put on the finishing touches by pruning, thinning and spraying.

Apple trees will grow well and bear fruit in about every variety of soil, except upon muck swamps and low marshes. The finest fruit as to texture and quality comes from the side-hills and stony hill-tops, where is good, strong, loamy soil, with water, air, and frost drainage, which are essential to securing the finest appearance in the fruit.

A free circulation of air tends to dispel many fungous troubles that mar the beauty of the fruit, and therefore less spraying is required by the hill-top apple trees than those growing in the valleys.—J. H. Hale in Collier's.

DISEASES OF CHERRY AND OTHER TREES.

A bulletin issued by a German agricultural institution speaks of the dying cherry, apple and other fruit trees, in which the following symptoms are usually seen: Wilted, yellowish leaves, meagre foliage, shedding of the unripe fruit, deficient ripening of the fruit on the trees, death of the bark on the trunk and larger branches, death of twigs, and finally the death of each branch and of the entire tree. Associated with the disease, on stone fruits in particular, is the appearance of gum mainly on the dying bark. A cross-section of the diseased limb where the bark is dying shows that the underlying heart and sap wood is colored. This discoloration may be traced from the roots to the smaller branches and twigs, but here the coloring is mainly in the inner heart wood, while the young sap wood, cambium, and bark are as yet sound and healthy. On following the coloring down into the roots, the cross-section of the diseased wood is seen to become less, finally ending in a dead root, usually the taproot, while the lateral roots may be healthy.

This inner coloring of the heart wood seems to be due to bacteria which attack the old and dead cells and spread outward in the older branches toward the bark. On trees thus diseased are found a species of fungus belonging to the genus Valsa (Cytospora), but the author claims that neither the bacteria nor the fungus is the primary cause of the death of the trees but that unfavorable environment and weather and soil conditions weaken the resistance of the trees until these parasites are able to gain a permanent foothold and finally cause the death of the trees.

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This is the ***Troutman Orchard Heater*** and it is no prospect nor experiment, because it has been tested and affords absolute protection. Can you afford to take a chance on losing a crop which has cost you the labor and anxiety of a year? Josh Billings said: "It is no credit to a cow to give a pail full o' milk and then kick it all over." ***Send for descriptive matter*** and horest testimonials. Special prices if ordered this month.

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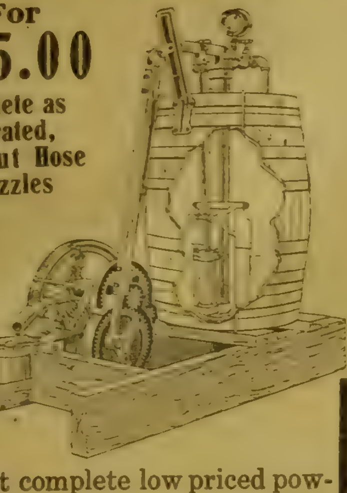

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Both one year for $1.50.

A Superb Farm Wins a Cow

A Sacramento Valley Contest which will Lead to Better kept Farms

A registered Holstein-Friesian cow having the blood of some of the best producing strains of that magnificent breed, is a valuable addition to the small rancher's assets. When such an asset is acquired by an operation which has been in itself profitable and at the same time at no direct cost for the cow, the rancher is indeed "lucky." Such a streak of luck struck a Sacramento valley farmer last week, and as usual it was a case of "luck" following hard work. The cow is worth several hundred dollars of California gold, and the farmer securing her had only to lead her home. Would Cultivator readers like to know this interesting story? It's worth the telling, though it must be short and only in outline.

The Story.

Two years ago representatives of eastern capitalists began looking over the rich lands of the western side of the Sacramento valley and the rich waters of the Sacramento river. Still farther back an effort has been made to take out the waters and apply to the land, which was only well under way when the effort was abandoned because of lack of capital. These lands comprising thousands of acres of the great Glenn ranch in Glenn and Colusa counties were purchased by the capitalists, who were often referred to as the "Pittsburg Syndicate," or as the Kuhn Brothers Company, bankers, of Pittsburg, and again as The Sacramento Valley Irrigation Company. This great concern purchased not only the original canal and land holdings, but other thousands of acres, until now over 125,000 acres is under its ownership.

These lands are now being subdivided and sold in small parcels—usually 40 acres—to home makers. But that story is too long. Now, about the cow story.

In March last the company conceived the idea of encouraging better planned, better kept, better profit producing places on the part of those who had bought property under the system. The idea took concrete form in the offer of a pure bred, registered Holstein-Friesian cow for the farm showing best improvements, best yield, finest arrangement of its irrigation system, neatest arrangement of grounds and proper diversity of products, the contest to end on October 15 and to be decided by three disinterested judges.

On Saturday morning, October 15, the judges, consisting of Prof. E. J. Wickson, dean of the Agricultural College of the State University, B. H. Burton, president of the National Bank of Willows, also of the Colusa County Bank, and C. B. Messenger of the California Cultivator, were taken to the various contesting places by Messrs. Fentress Hill, Manager, D. W. Ross in charge of the engineering force, and W. S. Guilford, director of agriculture for the company.

It was a beautiful Sacramento Valley day, perfect in every respect. Old Shasta's outline far to the north was plainly visible. Lassen peaks appeared closer on the north and east, while Marysville Buttes on the south and the Coast Range on the west, the higher points covered with snow from the recent storm, made a beautiful background on all sides.

The big machine which conveyed the party to the various places left the company headquarters at Willows at nine o'clock, visited the seventeen places contesting for the prize, passed six little cities of the coming empire and covered approximately ninety miles in the two counties of Glenn and Colusa before 3:30 o'clock. Good roads which abound in all save the newer sections were responsible for the distance covered.

The contestants were Mr. Mellhorn with 160 acres, Mr. Davis 20 acres, Wm. Saxton 80 acres, L. O. Custer 20 acres, E. E. Wood 20 acres, Mr. Lambert 100 acres, Mrs. L. Monlux 20 acres, Mrs. Anna Overholtzer 20 acres, Geo. N. Davis 23 acres, W. F. Burt 7 acres, H. C. Dayton, C. E. Congdon 250 acres, F. C. Southam 80 acres, L. L. Grieve 40 acres, W. J. Embly 20 acres, A. R. Horning 10 acres and L. L. Grieve 38 acres.

The Winner.

Each judge kept his own score card on each place and independently each placed the winning score on the smallest farm of the bunch, the seven-acre place of W. F. Burt. This place is directly under the levees of the Sacramento and on exceedingly fine, rich land. It is a good sample of intensive farming accomplished by the farmer's own labor and that of his family. Besides a living for his family Mr. Burt has banked over $1700 during the past year. Cows and pigs, fruit trees, garden truck, small fruits, poultry and even several stands of bees in a stray corner indicate that Mr. Burt makes the most of every item on the ranch. Besides the place is well kept and neat. The greatest defect, if a criticism is permitted, is that the grounds and approach to the house are not pleasing. One enters through the barnyard, the gate opening to the back door. Therefore in neatness and arrangement of grounds this place was marked zero, but its score because of productive capacity, irrigation arrangement and other features carried it through.

Many others of the places are worthy of hearty commendation, but one in particular, that of Mr. Mellhorn, is entitled to a special mention and even to an award. Unlike Mr. Burt's it is a large place—160 acres. Unlike it again, it is not yet a profit maker, for it was only purchased last spring and the summer has been spent in creating a system of dykes, ditches and reservoir. It is very complete in these improvements, practically the whole 160 being ready for the water. The house and corrals are neat and well built, but unfortunately the house is much too close to the barns. But all told the merit of the arrangement of the place was such that Manager Hill suggested that as a special recognition a likely heifer be chosen from the company's herd and tendered Mr. Mellhorn.

Already plans are under way for another year's contest. It will probably be on a more pretentious plan. It is a most practical method of encouraging careful and painstaking work on the farm and should create a spirit of friendly rivalry which will lead to beautiful and well planned farms on those rich acres.

WATSONVILLE APPLE SHOW NOTES.

Liberal exhibits were made on plates, exhibits of one box, five boxes, ten boxes, 100 boxes and carlots.

Apples of scores of varieties were exhibited, but as one visitor expressed it, there were no apples of discord.

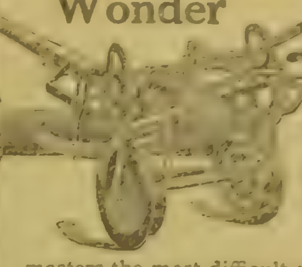
The Panama-Pacific boosters were in line everywhere and the little booster card fluttered from everybody's coat.

An interesting feature was a large tent filled with spraying machines, spraying supplies, orchard implements, and other aids to successful orchard work.

After the rain the decorations along the street took on a dejected look which did not add to the happiness of the Pajaronians, but once the sun came out later in the week, this discordant element was forgotten.

There are 60 large packing houses lining the tracks of the Southern Pacific in the city of Watsonville. At Pajaro and other nearby places are 20 others, making practically 80 large packing houses employing 4000 people during the packing season. Some of the houses employ Japanese in packing, but many are finding the most satisfactory results with women packers.

20th Century Grader
The Light Weight Wonder



600 Pounds
—masters the most difficult pieces of land—[illegible] so it won't need [illegible] the land—throws up [illegible] ditches and maintains your roads.
This grader is invaluable on fruit farms. One man—one team—operates it. The 20th Century is
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In the Climax Pneumatic Ensilage Cutter both the cutting and elevating are done by a large wheel which carries the knives on one side and the elevating fans on the other. Both the cutting and elevating, therefore, are done at one operation, in much simpler manner and with an expenditure of much less power than in those machines where the elevating device is a fan attachment added to the cutter.

The convenience of having an ensilage cutter of large capacity on its own road wheels is obvious. We confidently assert that no other ensilage cutter is so easy to work and easy to move and set up as ours, or has such large capacity for power used. They are unequaled in simplicity, strength, durability, convenience and safety in operation, and the excellent quality and uniformity of the silage. We received at the

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for ensilage cutters of the side-wheel type, 5 to 50 tons of green corn per hour, where cut in one-half lengths, other feed in proportion. For further particulars, call on or address

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Dairymen and stockmen are requested to write of their experience. Mrs. Sherman is always willing to answer queries and this, with experience of other workers, will make this department of greater value.

FEEDING THE HERD.

By Mrs. M. E. Sherman.

Some men are trying to raise dual purpose cows, that is having a cow that will pay as a dairy animal and yet give her son beef qualities and carefully give to her daughters the same qualities as a milker she possesses herself. Now, some of us do not believe in this cow, for like the man from Missouri we say "Show me" and even go as far as the man from Texas and say "Put it in my hand." It is a noticeable fact that the newer dairy districts have the dual purpose cow idea in their minds. When the dairymen test their cows for butter fat gradually they come to see that a cow that is good as a butter producer is enough without thinking of the value of the beef she carries on her back.

Balanced Ration.

Cows like all living animals are products of the foods they consume. Now the scientific balanced ration is made narrow enough to give the cow all she needs without any wastes. The theory is a fine one but somehow it grows more doubtful as time passes, if it is as perfect a thing as we at first thought. The general welfare of the herd has to be considered. The cow must not be crowded too closely or the general strength will fail. Nearly everyone has widened a little on the standard as laid down by the earlier authorities. Fat in the food we have found out has a value greater than was known. The Jewish people under most adverse system of crowding into Ghettos have shown an immunity to tuberculosis that is remarkable. Food alone can account for this in the way they have been forced to live. The children are fed on fats in large quantities, their diet is over weighted with fat, the result is less intestinal trouble and almost no tuberculosis.

Protein.

A narrow ration in cow feeding is one that contains full amounts of protein and a lessened amount of fat and carbo-hydrates than is fed to the growing animals. A cow in milking is directly responsive to the feed she receives. An experiment, made some time ago, by Prof. Eckles of the Missouri Experiment Station shows how thoroughly the giving of milk may be bred into cows. A cow giving a small amount of milk, twenty-one pounds, was taken while still fresh and given only enough food to maintain her body without regard to the amount of milk she was giving. She was milking twenty-one pounds of milk of 5 per cent richness. She was fed 7 pounds of hay and 3.5 pounds of grain a day. The test was ended on the 29 days as the cow became so weak that it was considered cruel to push the test to the limit, for this cow took from her back and put into the milk pail not only her food but one hundred and fifteen pounds of her own weight of fat. The last part of her test she gave milk that tested 6.9 fat. She gave out that which she did not receive in her food. She was a cheerful giver and the dairyman loves that kind.

Do your cows milk hard? Send 50 cents for teat expander. O. J. Weber Co., 225-227-229-231 East Sixth St., Los Angeles.

Returns.

If the servant is ever worthy of her wages surely the dairy cow is worthy. The wise dairyman not only feeds the cow giving a full flow of milk but he feeds the cow that is dry. He feeds the fat onto the dry cow's back and knows that when the cow freshens, she will put this accummulated fat into the milk pail. Feed the dairy bred cow well when dry, but beware of feeding the beef bred mixture at this time or the cow will not come to her milk in any quantity when she freshens. The mixture of beef blood tells greatly in handling the feeding of the herd, for the beef animal when she puts on fat, keeps it while the dairy cow turns it back into the pail again.

Increasing Butter.

This way of stuffing the dry cow will increase the returns greatly of butter fat and make a record for her. The only increase in butter fat that can be secured in the healthy cow must come from increased yield of milk. The amount or per cent of butter fat is a fixed quality in the cow. Fever will increase the fat for a time and so will any local derangement by drugs. These are all harmful and not safe to consider even in the Show Ring. I have been asked at several Farmers Institutes if I did not think that when a cow was fed alfalfa solely for a term of years that the per cent of fat decreased in the milk. I could only say, I did not know. Have any of the readers anything to show this to be a fact?

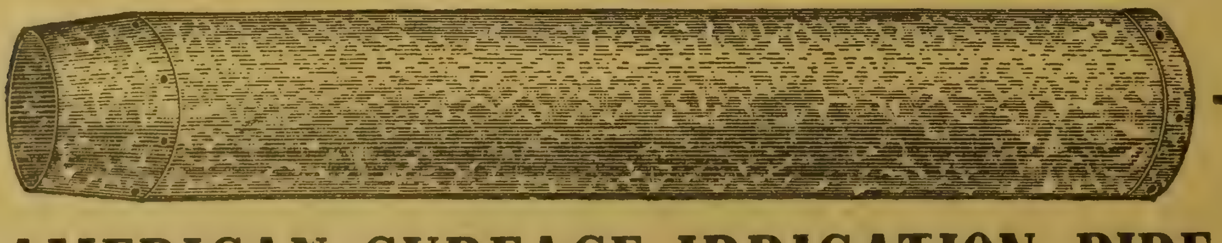
Feeding.

The animals on the ranch are never willfully stunted by lack of feed. I believe that the greatest mistake one can make is not to give them enough to develop well themselves and to give strength to their calves. The cows in the milking string should have a little grain, even when the pasture is good. This, of course, would not apply to common cows but well bred dairy cows. They will pay for the grain every time. The calf that is coming will make a better animal if the dam has never been short on the materials used in building up bone, muscle and flesh. Whenever a calf is dropped that weighs less than eighty pounds in the herd we consider the dam has not been well enough fed. Most of the calves weigh nearly a hundred and a few considerably more.

Burning Up.

The usual idea is that it will burn a cow's stomach to feed her grain all the time. I have not found that a cow's stomach was any more easily hurt than the human stomach. The idea that a large amount of very coarse stuff put through the cow would bring out her full capacity as a dairy animal has to be given up. The grain is simply giving her a smaller amount to digest to secure a greater amount of nutriment. In feeding a common cow increase her feed, until she does not increase her milk flow and then hold her at that point. When she is ready to go dry let her go off the grain feed easily. Watch her and if she falls off in flesh give her a little more grain. When the cow is dry is a good time to widen out her ration for a time, by giving her more fat forming foods.—M. E. Sherman.

Cream Separators, all sizes and prices. O. J. Weber Co., 225-227-229-231 East Sixth street, Los Angeles.



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It is for this reason that we so strongly urge dairymen never to allow their cows to stand on cold cement floors. We cannot know any too much about this wonderful machine, the cow, for she is the embodiment of the greatest of all mysteries, that of Motherhood.—Hoard's Dairyman.

Anthrax Cure, Milk Fever Outfits. See O. J. Weber Co., 225-227-229-231 East Sixth street, Los Angeles.

SALTING AND SMOKING MEATS.

Pork or bacon is specially adapted to salting and smoking; curing it renders it more digestible and wholesome. In the case of beef and other meats the digestibility and wholesomeness is diminished by both salt and smoke. The granular form of fat in bacon is easy to digest and can be eaten by persons to whom any other fat would be intolerable.

Scientific investigation has shown that the use of salt in preserving food has no appreciable influence on health other than favorable. Salting is probably the oldest method known as a dehydrating agent on the flesh, removing water retained in the tissues of the animal body. It is mildly antiseptic in its action, and in this manner aids to preserve. Owing to the large proportion of fat to lean, the flesh of the hog does not take up salt as readily as does other meats.

Just how long hog's flesh must be submitted to the influence of salting must be governed by various conditions. The absorption of salt is slower with hogs having a greater proportion of fat than is usual. The size, thickness, age and weight of the flitches and hams must be considered. Less time is required to cure the meat in a damp cellar than a dry room. The extremes of heat and cold are unfavorable. Great heat is apt to decompose the flesh before the salt permeates it sufficiently to cure it. When too cold, the meat juices become set and the flesh gets too firm for the salt to penetrate. The temperature of the curing room should never exceed 60 degrees Fahrenheit.

Some believe that the flesh should be rubbed with salt every day. This, however, is only necessary for the first three days. It is only required that the salt mixture be spread firmly over the flesh. In the case of large, thick pieces, or when the flesh is very cold, it would be advantageous to rub briskly. Care should be taken that the salt is pressed into every depression and well into the hock ends, where the feet have been cut off, and into the joints. To continue the hard rubbing too long will result in a hardened cured flesh.

Brown sugar is used in varying quantities with salt, in order to correct the hardening influence of salt on the meat. It also has a tendency to render the bacon mellow and increase its juiciness and flavor. Sugar may also be classified among the mild antiseptics as a meat preserver.

Saltpeter is used in curing. It possesses antiseptic properties, but its use is mainly to preserve the natural color of the flesh. The natural color fades when salt alone is used, thus lessening the attractiveness of the bacon. Too much saltpeter will have the effect of unduly toughening the meat. The quantity should be not more than one part to 25 parts of salt

In dry curing the following recipe is recommended:

Fine dairy salt	50 pounds
Brown sugar	5 pounds
Saltpeter (finely ground)	2 pounds

Mix well.

Rub in the mixture over the flesh parts and around the bones and joints for the first three or four days. Then spread the mixture freely daily. The sides should be stacked. Alternate the method of stacking so that the side on the top one day will be at the bottom the following day. It will require about 14 days of this treatment, according to size of the side.

Where a sweet, juicy, mild-cured bacon is wanted the following may be used instead of the foregoing:

Sugar and fine dairy salt, equal parts. Mix well.

To impart a distinctive flavor this famous French recipe is given:

Fine dairy salt	6 pounds
Brown sugar	6 pounds
Allspice	1 pound
Mustard	1 pound
Saltpeter	1 ounce
Bicarbonate of soda	1 ounce

Mix well.

Rub over the flesh daily for three days and afterward spread on each day for 17 days, turning the sides in rotation.

At the conclusion of the dry-salting the flesh is brushed over to remove salt, pieces of fat and flesh, and cleaned up. The side is washed in rain water and soda for 24 hours. This solution is made by dissolving one pound of bicarbonate of soda to 20 gallons of clean rain water. This removes excessive saltiness and makes the curing milder. Follow this by washing in clean rain water. The meat edges and bones are trimmed again. All sharp pieces of bones and loose or hanging pieces of meat are removed, leaving the side neat and shapely. Hang the side up to dry in a room free from dust and insects, with a full current of air for several days. Then lightly rub olive oil over the skin and flesh for smoking.

The smokehouse should be about 12 feet high, as the bacon must hang from 6 to 10 feet from the floor. There should be no light except that admitted when opening the door. Sunlight is apt to bleach the bacon and deprive it of its natural color. Some ventilation is needed, but it should be under control, for the aim is to surround the bacon with a dense atmosphere of smoke at a low temperature. The smoke should be carried to the bacon as cool as possible. To do this care must be exercised in preventing direct heat reaching the bacon. In deciding the length of time to apply smoke, judgment must be used. The desirable color is a light brown tan. To secure this smoking may occupy any period from 36 hours to five days.

Finish the sides now by dressing and rubbing the skin and flesh with pure olive oil.

CROSSING HOGS.

In raising hogs for the pork market there are some advantages to be gained in crossing breeds. Some crosses bring out the srong points of both parents; and nearly always a cross between pure bred animals of different breeds results in increased vigor. Of course violent crosses should not be made; but when two cross breeds nick so well that the cross bred offspring are uniform, crossing offers some advantages.

One should choose his sows from a breed that is long bodied, roomy in their build, and prolific. Even though the sow be somewhat narrow and leggy it will not matter. You want a large number of pigs to the litter and you want them to have plenty of milk, so pick a sow that will give both. Then cross her with a boar of a compact, easily fattening, quickly maturing type, and these characteristics will appear in the offspring to a marked degree, if the breeds are well suited for mating. The Berkshire-Poland China cross is a good one and may be made with either Berkshire or Poland China sows. The Tamworth-Duroc Jersey is very prolific, and some breeders say that when they are crossed with the Poland China they give a longer bodied pig than the latter, and one of great smoothness of outline and with good rustling properties.

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The Ornamental Garden

PRUNING ROSES.

The National Rose Society, of England, includes in its membership the leading rosariahs, not only of Great Britain but also fo the world at large.

The growth of the Society in recent years has been almost phenomenal, indicating thereby the rapidly growing interest in the cultivation of the queen of flowers. As late as 1900 the membership was only about six hundred, while at this writing some four thousand rosarians, professionals and amateurs, are recorded in its archives.

From its handbook we quote how to prune roses:

"The following general directions and explanations should be carefully read before proceeding to carry out the instructions afterwards given, or the reader may fail to grasp the meaning they are intended to convey.

"The late Rev. A. Foster-Melliar in his 'Book of the Rose,' pointed out that the necessity for pruning arises in a great measure from the natural growth of the rose. 'By watching,' he said, 'an unpruned rose tree, either wild or cultivated, it will be found that the first strong shoot flowers well the second season, but gets weaker at the extremity in a year or two, and another strong shoot starts considerably lower down, or even from the very base of the plant, and thus soon absorbs the majority of the sap, and will eventually starve the original shoot and be itself thus starved in succession by another. A rose in a natural state has thus every year some branches which are becoming weakened by the fresh young shoots growing out below them. This is one of the principal reasons why pruning is necessary. A rose is not a tree to grow onwards and upwards, but a plant which in the natural course every year or two forms fresh channels for the major portion of the sap, and thus causes the branches and twigs above the new shoots to diminish in vitality.

Two Distinct Operations.

"This being the case, in order to maintain the strength of the plant and to keep it in the shape required, the wornout shoots must each year be cut away, and the remainder left almost their entire length as in the case of climbers; or shortened back to a greater or less extent as the nature of the variety or the object for which the plant is grown may require.

"Pruning, therefore, is the art of improving the productive power and the appearance of the plant. It consists of two distinct operations. (1)—The removal of dead, weak, overcrowded, or otherwise useless shoots. Unripe wood which in the spring will usually be found to have discolored pith caused by the winter frosts should be cut clean away at the base of the shoots. (2)—Pruning proper, the shortening of those shoots which are allowed to remain after the thinning out process has been completed.

"The most frequent errors made in prunning are (1) leaving too many shoots when thinning out; (2) pruning severely the shoots of varieties which require little, if any, shortening; (3) pruning lightly the varieties which require severe pruning; (4) leaving rose plants crowded with shoots and cutting these to a uniform length all over the plant in a similar way that a hedge is clipped.

"In thinning out a shoot it should be either cut clean away to the base of the plant, or to its starting point on the older shoots from which it springs, as the case may be. When the plant has been pruned the shoots should be left as nearly as possible equidistant from each other, and regularly arranged round it so that it represents a well-balanced appearance on all sides.

"When pruning a shoot it should always be cut to a dormant leaf bud, or 'eye,' as it is called, pointing outwards. In order to keep the plants in a healthy and vigorous condition, some of the shoots which are more than two years old should each year be removed to make room for younger and more vigorous growths.

"Roses require to be somewhat differently pruned according to the purpose for which they are grown. For instance, shoots must be cut back severely if the plant be required for the production of exhibition roses, but if for ordinary garden decoration the shoots must be left longer; if to form bushes they must be left still longer, and if to clothe pillars, arches, etc., some of the shoots will scarcely require shortening at all.

"To cut down rose plants in order to obtain exhibition blooms may seem to the beginner likely to endanger the life of the plants, whereas in practice the harder the shoots are cut in the spring the stronger will be the new growths made during the summer.

"When pruning a rose for the decoration of the garden it should be borne in mind that it is a decorative garden plant, whether it be the large bush or pillar to stand alone, or the dwarfed kind to be massed with others in a bed. As a large range of kinds is available for decorative purposes, it is necessary in pruning, as will be seen by the instructions which follow, to take into account their individual habits and requirements.

"A large and strong-growing rose usually requires some two or three years after planting to reach its full size, and, it is therefore during those first years that the plant has to be built up, and its framework, as it were, formed.

"All roses the first time after planting should be pruned severely, that is to say, they should be cut down to within three or four incnes of the ground. Even in the case of strong growing climbing varieties only the strongest shoot should be left more than one foot in length.

"Roses planted in the autumn should be pruned in the following spring, and if plahted in the spring should be pruned at the time of planting.

"After the first year they should be pruned in accordance with the instructions which follow:

For Ordinary Cultivation.

"In pruning roses for ordinary cultivation or for the decoration of the garden the following rules may be laid down, which apply to all:

"All dead and unripe shoots must be cut clean away to the base whence they started.

"In shortening the shoots, always cut to an 'eye' pointing away from the center of the plant.

"Summer-flowering roses (those which bloom only once in the season), generally need thinning and training rather than hard cutting, and last year shoots should be left long, two-year-old shoots rather shorter, and the three-year-old shoots shorter still.

"The same thing will also apply to a great extent to perpetual flowering roses, but in their case too hard pruning will not destroy, but only defer the season's bloom.

"Climbing roses should have some of the older shoots cut away entirely each year, directly after the plants have flowered in the summer, and the young shoots lightly tied in to take their place.

Nowadays we have no China asters such as our grandmothers grew, but the varieties developed from that modest old strain by our wonder-working florists cannot be left out of any garden without depriving it of one of the most satisfactory of all plants. Nothing is easier to grow and nothing blooms more profusely, nor is richer in color; and few plants have its merit of blooming late in the season. Some of the new varieties resemble the popular chrysanthemum so much in size and shape and color that they are often sold for that flower in the fall. For cutting, the best variety is the branching, with flower-stalks a foot and a half in length.

Garden and Field Crops

THE CELERY LEAF-TYER.

By H. J. Quayle, Whittier Laboratory.

The celery leaf-tyer (Phlyctaenia ferrugalis, Hubn) is a small worm that has been known to occur in the celery fields of Orange county for several years, but not until last year did it appear in such great numbers and do serious damage to the crop. It feeds upon the foliage and also has the habit of spinning a large amount of silk with which the leaves are entangled and matted together. This actual devouring of the foliage and the matting of the leaves prevent the plant from growing normally; but the most serious injury is due to the gouging of the worms in the stalks themselves, often down completely to the base. Stalks so injured are thrown out and where the infestation is severe the direct loss to the product is very heavy.

Distribution.

This insect extends over a wide range of country covering practically the whole of the United States. But in a climate less balmy than that of California it is confined largely to green houses; and in the eastern and northern states it is known as the "green-house leaf-tyer" where it is a pest on various ornamental plants.

Life History.

The eggs are deposited singly or in small masses on the under side of the foliage. They are scale shaped and grayish white in color. About 12 days on an average are required for hatching.

The young larva begins feeding on the under surface of the leaves and in the course of a few days begins to spin a silken web by means of which it fastens together parts of a leaf or two or more leaves if they happen to be in close proximity. In this way it continues to feed and grow, but often, sooner or later, it works its way deep down into the stalk where its most serious injury is done.

When ready to change to the pupa it spins an irregular cocoon of silk at the edge of the leaf or it may roll up two or more, making use of the surface of the leaf for protection. The full grown larva is green or greenish yellow in color and measures about three-fourths of an inch long. The length of life as a worm or larva is about three weeks. The pupal or chrysalis stage lasts from 8 to 12 days. Counting the egg stage at 10 to 12 days the total cycle from egg to moth will be from 40 to 45 days.

There are two other worms commonly found with the leaf-tyer, the colony looper and the silver caterpillar, but these are both very much larger and should not be mistaken for the smaller leaf-tyer.

The adult of this worm of the celery is a moth which is pale reddish brown in color and measures with the wings expanded about three-fourths of an inch. These are usually not seen during the day unless they are disturbed from their resting place which is generally on the lower surface of the leaves or well down toward the base of the stalk. They are active just before sundown and it is at that time that the eggs are deposited.

Control Measures.

Mr. S. S. Rogers, of this laboratory, in connection with his work on the celery blight last year, tried various kinds of sprays for this insect and found that an arsenical poison gave most promise of keeping the worms in check. This should be applied early in the season upon the very first appearance of the worms. Not only are the worms themselves easier killed at this time, but on account of the small size of the plants, the spray can be applied murch more effectively.

Paris green in the proportion of 1 to 1 1-3 pounds to 200 gallons of water is the most practical poison to use. This is preferable to the other standard arsenate, namely, arsenate of lead, for the following reasons: First, we have shown that there is no injury to the plant through the use of Paris green, and it is for this reason, very largely, that arsenate of lead has superseded Paris green in apple spraying work. Second, it is cheaper and is a more active poison. Third, it is not retained on the plant so long as the arsenate of lead. Fourth, it can be combined with the Bordeaux mixture for the blight without affecting the character of either spray.

It is important to force this spray thoroughly into the crown of the plant by strong downward pressure. Because of the insolubility of Paris green it should be kept in mind that almost constant or very frequent agitation is necessary to keep it in suspension in the water.

The worms appeared this year about the middle of August so that the first spraying should have been applied then. There is of course considerable variation in the time of planting the different fields, and the spray can be longer postponed in the later plantings. A second spraying for the worms should be applied at the time of the first spraying for the blight and here the Paris green and poison can be combined. If a third spraying seems necessary the poison can again be combined with a later spraying for the blight.

If the Paris green is applied while the plants are still small, or partly grown, there is no occasion for alarm through possible poisoning from eating the celery. It has been determined, in the case of other plants, that enormous quantities would have to be consumed at one time to have any ill effect. Apples are almost universally sprayed the last time when they are practically mature, and with arsenate of lead which adheres more tenaciously than Paris green. Cabbage is also sprayed with Paris green up to the time the heads are half formed. Besides, celery is always washed before placing on the table and this would remove what little poison might still be remaining. However, if the spraying is delayed until the plants are nearly mature it should be done with the proper precaution, or else a contact insecticide, such as kerosene emulsion, substituted.

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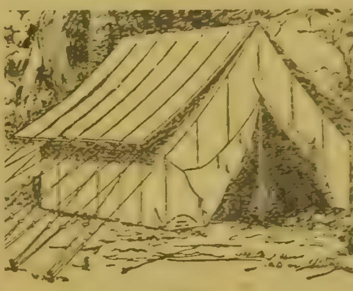

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California Cultivator

A Journal of Horticulture and Agriculture

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OCTOBER 20, 1910

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Painstaking Work

Probably the boosters who boost hardest for fairs, carnivals, expositions and other similar functions are those interested in increasing our population, causing greater demand for real estate and generally advertising the community or state. There is nothing necessarily to be condemned in such an aim, but vastly greater benefits may accrue if a more important adjunct of prosperity is encouraged. We have visited many such fairs, agricultural, citrus, grape and apple, and it sometimes appears that many, perhaps more correctly, a few, attend with no eye for improved methods, improved varieties, nor an uplift which will improve quality and reputation and ultimately profits.

We have seen a similar spirit in citrus packing houses where fruit of growers co-operating in packing is brought together. The grower of the very poorest fruit often has an idea—and we believe he is honest in it—that his fruit is the equal of the best. Of course he has a grouch if it isn't so classed, and fails to grasp the idea that improvement may lie in himself. The exhibitor who fails may feel that judges are partial to others or can not appreciate quality. Possibly they can not; more likely they can, and it is reasonably sure, are honest.

In any case the first step on the part of the exhibitor may well be to look within and inquire diligently. The case of judging car lots at the Watsonville Apple Show illustrates. Sixteen exhibits were made; some faced beautifully, beautifully colored fruit, almost a perfect pack, tight pack, etc., but three conscientious judges going to the bottom of three boxes in every car found varying conditions. Indifferent fruit in lower tiers was mercilessly exposed, every wormy or scaly or off-sized or off-colored apple counted and the best car determined with exactness.

The market in which fruit is sold is as merciless as the judges, more so if possible. The poor fruit at the bottom affects the retail purchaser, for some one has to purchase it; this in turn affects the wholesaler and the demand, and the "prize" of a high reputation and keen demand, for the brand is lost.

The packer and producer can learn valuable lessons by following for an hour as good judges as scored the Watsonville Show. There were exhibits by the largest shippers, concerns with world wide reputations as big handlers of fruits, one of which had the lowest scoring car on exhibition, while the silver cup, two gold medals and $250 in gold for the Grand Sweepstakes went to a comparatively unknown packer, a Slavonian.

Why? Painstaking.

Educating Downward

Referring to the conditions existing near the University Farm School, Mr. Geo. W. Pierce of Davis stated in an address before the Farmers' Week audience that in all fairness to the youth coming there to be educated at the state school the conditions which permitted so many saloons near such an educational institution should be changed. The effort was once made to wipe out the deadfalls, but the believers in the saloon won. This paper has nothing to do with the saloon question excepting where it concerns the education of young people of the farm. The young men of the State University at Berkeley, who are much older than those attending the school at Davis, are protected by abolishing the saloons. Likewise at Stanford. Davis must realize that in receiving the University Farm in the community it must assume the role of an educator of the youth of the state, and the most casual observer can only feel that the education given by the present surroundings of the institution is entirely in the wrong direction.

A Great Farmers' Week

Last week proved a most valuable one to those able to attend the University Farm Farmers' Week program. From early Monday morning till Saturday afternoon, including evenings, a continuous feast was spread and the large attendance showed appreciation of this effort of the University people. On Friday evening a diversion and a genuine delight was afforded in a concert by the U. C. Glee Club, but all the rest of the week was filled with solid meat. In fact, so full was the week that much of the time two sessions were held in different rooms.

One feature which proved of exceptional value was the Home Economics demonstration. Miss Clara Palmer, a new instructor on the staff of the State Polytechnic school at San Luis Obispo was in charge of that program.

We refer to the program on this page merely to call attention to the continued success of that which we hope will be a permanent feature of the State Farm work. Another week more particulars will be given.

The Coming Citrus Crops

Southern Pacific and Santa Fe freight traffic officials state that their field agents report that, owing to the increase in the planted acreage and the favorable condition of the groves since the first of this month, California will produce, during the season beginning in November, between 30,000 and 50,000 carloads of oranges, the largest in the history of the industry, and the aggregate gross value of which will be in the neighborhood of $50,000,000.

According to the field agent's report, this large production of oranges, which is also meant to include lemons, will come from the following citrus growing district:

Southern California, 45,200 carloads.

San Joaquin Valley, 4000 carloads.

Oroville district, 800 carloads.

The largest production heretofore was in 1908, when the number of carloads was 41,400. During that season the Oroville district and San Joaquin Valley—better known among the orange men as the Porterville district—shipped 2600 cars. The remainder came from south of the Tehachapi mountains.

The crop in the Porterville and Oroville districts ripens and gets into the market four or five weeks before the Southern California crop. The Porterville residents pride themselves on shipping their first consignment East, the last week in every October. Oroville is a week later. Both districts readily get their product into the Eastern market in time for the Thanksgiving Day trade.

The railroad revenue from the business is generally believed to be one-third of the gross receipts from the business. So if the crop for the new season, beginning in November, is placed at $50,000,000, the railroads will get as their share $16,666,000 in round numbers.

Consul John F. Jewell, of Melbourne, furnishes a copy of the Official Review of the butter trade of Victoria, from which it is shown that the total amount of butter received at Melbourne from the several districts of the state amounted to 46,642,400 pounds during 1909, while the exports for 1909-10 amounted to 36,388,000 pounds, which was the highest figure attained in the history of the export trade.

The early predictions about the size of the lima bean crop, says the Oxnard Courier, are being outdistanced. From every hand comes the word that the crop is greater than was predicted. It is estimated that there have been more than 700,000 bags threshed and that the total crop will run more than 1,000,000 bags.

Citrus Fair at Visalia

A meeting of the Citrus Fair committee was held at the Tulare Board of Trade rooms, October 6, at which it was decided to hold the fair between December 5th and 10th, opening Monday evening of the first mentioned date, and closing on Saturday evening.

It was decided to go before the supervisors at the session next week and make formal request for the usual $1000 donation. The board has tacitly promised this amount.

The matter of the premium lists was discussed and it was decided to rearrange them, increasing the prizes in some cases. The matter of points on which to base awards was also considered. The committee was reorganized with the following composing the membership: V. D. Knupp, W. S. Sprott and A. G. Schulz, Porterville; L. S. White and G. S. Berry, Lindsay; A. B. Young, C. F. Balaam and U. G. Knight, Exeter; W. B. Nichols, F. H. Wilson and Tom Arthur, Dinuba; C. E. Goodale, D. G. Overall and J. E. Pogue, Lemon Cove; J. Sub Johnson, A. Levis and Leon Goldstein, Visalia. Officers were not elected, this being left to the spring meeting.

Estimate of Raisin Output

The Fresno County Chamber of Commerce has appointed a special committee to ascertain as nearly as possible the California raisin crop for this season. There have been many contradictory statements on the part of both bulls and bears and the Chamber of Commerce deems it wise and fair to both producer and consumer to obtain and publish reliable statistics. The committee, through its chairman, George L. Warlow, has sent blanks to all raisin producers requesting information as to acreage, trays, and tons of Muscats, Thompson Seedless and Sultanas for the years 1909 and 1910. An immediate return of the blanks is requested, and a fund of valuable information will doubtless be gathered.

It Rained

October rains do some good; possibly an early October rain does more harm than good. The recent storm found some table grapes on the vines and did some damage. Some unthreshed beans were discolored, and possibly some threshed grain still in the fields was injured and some sugar beets had their sugar content destroyed.

On the other hand, some ground was made ready for plowing for fall seeding, and for the comfort of all of us the dust has been washed from the atmosphere and from the foliage and life seems more livable. Whether the result is good or bad, the rain came, and the lesson is to be prepared another October for its recurrence.

To build up and maintain fertility in the soil, feed a large part of the crops and return the manure to the land. If manure is not available, plow under crops grown for the purpose. Plow deep (but do not subsoil). Grow leguminous crops for the nitrogen they add to the soil.

The output of the Pajaro Valley this year will be upwards of 4000 cars besides much fruit used in the driers, and for cider and vinegar. To produce this the Valley has planted a million trees, and it is claimed that less than half the acreage of that section is in apple orchards. The Valley produces more than the states of Oregon and Washington combined. The gross income will amount this year, it is estimated, to two and a half million dollars. The yield per acre is variously estimated at from $250 to $800.

Agricultural News Notes of the Pacific Coast

Northern California

Shipments of navel oranges from Oroville were expected to begin this week, and from the Porterville district next week. They will be pretty sour, but it is expectd that they will sell.

Data that would cost considerable to obtain is contained in a pamphlet concerning the yield of the eucalyptus plantations in California, which will be issued shortly by State Forester Homans.

Mrs. Godding sold 13 acres of her orange ranch at Lindsay to O. E. Crouch. . The grove consists of five acres of Valencias and 7 acres of Washington Navels, 5 years old. The consideration was $17,500.

A report says that W. C. Brown and company recently shipped a car of Zinfandel grapes to Chicago, receiving a net price of $15.50 on board the cars at Lodi. This is said to be the first time that wine grapes have been shipped East.

The creamery owned by E. F. Hale at Orland, Glenn county, has been sold to H. H. Bennett and other parties in Sacramento, who propose to enlarge and otherwise improve the plant. An ice factory and cold storage plant will be added.

Game Warden George Neal plans to make the state farm at Folsom penitentiary into a game preserve. The farm covers many acres. When assured of protection Neal will release the thirty Hungarian pheasants which he now has for breeding purposes.

The rice of the experimental farm of the Sacramento Valley Irrigation Company at Willows, is ripening well and being harvested as fast as it ripens. The growth is vigorous, with large heads of well-filled grain, all fully matured and of good quality.

T. B. Gibson of Woodland finished harvesting his beet crop last week. Mr. Gibson was one of the few men who harvested a fair crop under the irrigation system. He harvested about 200 acres and the average yield was about thirteen tons to the acre.

L. E. Alling has sold to a syndicate composed of A. N. Davis, E. L. Davis, Edward F. Davis of Linden, and the firm of Grunsky, Dietrich & Liestner of Stockton a tract of land consisting of 466 acres, situated in the Linden section about six miles east of Stockton.

The Tharp Bros. farm near Kirksville, in Sutter county, will produce from $20,000 to $25,000 worth of beans and broom corn this season, if the weather will permit the harvest of the same. There are 200 acres of beans besides a large field of broom corn.

The Sutter Farmer says that the warehouse at the Armsby Preserving Co. cannery is a busy place, as the canned fruit, which has filled the big building during the summer, is now being labeled, boxed and shipped. This has been the biggest run and largest pack made of any previous season.

Driscoll Brothers of Watsonville have leased a fifty-acre tract of land on the California Nursery property, and will establish a strawberry farm. The new firm has had considerable experience in the strawberry business and are satisfied that the land chosen is adapted to the production of this fruit.

There was shipped from Sacramento on October 1 fifty crates of California grapes on their way to Mexico. Each crate is addressed to a high Mexican official, or some personal friends of President Diaz. The grapes are not being sent as an advertisement of the vineyards of California, but by special order of Diaz himself.

Central California

An agricultural society is being organized by the students of the Fresno high school who are taking part in that department.

The Fresno office of the government weather bureau service will issue bulletins each morning and evening until the critical point in the raisin season is passed.

Governor Gillett has appointed Dr. Chester Rowell of Fresno, and Judge Charles W. Slack of San Francisco as regents of the University of California to succeed themselves, term expired.

In the country real estate market one of the most important of recent deals recorded is the purchase of 3000 acres of wheat land in the Crocker-Huffman irrigation district of Merced county.

The old Borden & Freeland ranch of 320 acres, one of the most desirable tracts of land in the vicinity of Madera, has again changed hands, Tyrell Bros. of Porterville having come into possession.

Glanders has again been discovered in the upper Tule country and today in accordance with the orders of the county veterinarians six valuable animals suffering with the disease were shot and the bodies incinerated.

The Sunset Lake Investment and Irrigation Companies contemplate a general scheme of improving and reclaiming lands in the Kings River slough country and have made the arrangements to finance the project.

"California District and County Fair Association" is the name for a new organization formed at Visalia, October 4, for the purpose of securing a passage of a bill by the next legislature to give aid to county and district fairs.

Seventy-nine carloads of apples in one day's shipments from Watsonville is the new record which was made October 3, which brings the total shipments for the season up to 1586 cars as against 824 at this time last year.

October 11 the Watsonville Driving Club gave a parade that was worth looking at. There were thoroughbred horses, the best in the Pajaro Valley, and trotters and pacers from Hollister, Salinas and other nearby towns, in line.

The Fresno county fair was in full swing during the week of October 3. Features of the program were a parade through the business portion of the city, including the fire department, political clubs, labor unions, horse racing, etc. The agricultural and horticultural exhibits were typical of the Fresno district.

Mr. Albert O. Griffes, who lives three miles above the power house on the middle fork of the Kaweah, at an altitude of about 3500 feet, was in Exeter recently, says the Sun, and stated that he had some of the finest orange trees on his place to be seen anywhere, and that the fruit this year is large and plump and the yield good.

Messrs. Marks and Hoffman are the owners of four hundred acres of land near Tipton, which they are now developing by putting down three wells, two of which are twelve inch, while the third will be seven inch for domestic purposes only. The two larger wells will be equipped with 25-horsepower engines and No. 8 pumps.

The new raisin seeder at the Dinuba Farmers' Union Packing house here was started on muscats October 1 for a trial. It is a very good piece of work for a try-out and in a couple of days the machinery will be in shape for constant running. This new seeder will give employment to between two and three dozen extra hands for many weeks.

Southern California

For a cash consideration of $20,000 George W. Thomas of Riverside has purchased an eighty-acre alfalfa ranch near Perris, from E. S. Moffett.

For a consideration of $15,000 F. W. Hetherly of Los Angeles has purchased a tract of 70 acres in the West Riverside district. It is his intention to plant the property to Valencia oranges.

The business men of Beaumont met October 6 and organized a new board of trade. Geo. W. Lee was selected as president, G. F. Van Velzer and Oscar Littchen vice-presidents, and Mr. Ridsdale secretary.

A revised estimate of the loss sustained by the American Olive Company in the destruction of its olive plant in Los Angeles recently places it at $175,000; insurance carried $100,000. The plant is to be rebuilt at once.

As an indication of the rapid extension of the dairy business in the Imperial valley, the Press of El Centro claims that during the past 12 months not less than 2000 cows have been shipped into the valley as based on the report of cow dealers.

Mines & Farish, of Los Angeles, report the sale of 1000 acres of land located four miles southwest of San Jacinto, for a consideration of $60,000. The land was sold to Mrs. A. E. Higgins of Los Angeles, who buys the property for an investment.

The Glendora Water Company will soon have its big reservoir on Palm Drive, just east of the Glidden villa, ready for use. The capacity is one million gallons and the pressure per inch on a level with the business section of town will be forty pounds.

The Riverside Press says that E. W. Hall of the Hall meat market is looking for the owner of a gold ring discovered in the craw of a hen killed at his market. The ring is of solid gold with skull and crossbones emblem, the eyes being of emeralds.

The price of apricots where growers yet hold them, is kiting. A report from Santa Ana states that the minimum price there is 11 cents per pound and the directors of the Orange County Fruit Association are considering holding for 12 cents minimum.

The people of Brawley are making an endeavor to secure a viticultural station for Imperial county, and are now in correspondence with a Federal vine expert in an effort to get assistance in solving local problems in soil conditions, climate and practical culture.

W. G. Leopold, the well-known purveyor of vegetables, has disposed of his Bardsdale ranch to Hess Elkins, a lifelong resident of Fillmore. The ranch is located on the Guiberson road and consists of 53 acres, part of which is in lemons and the balance in garden truck.

At a recent meeting of the Los Angeles Board of Health it was represented that G. W. Barnett, out near Silver Lake, was starving his cows. It was said at the meeting that many of the cows can scarcely walk, and the Society for Prevention of Cruelty to Animals was asked to take the case up at once.

"The Whittier Vegetable Growers' Association is now active at its packing house at Evergreen station. The season, thus far, has been an especially favorable one and if conditions remain so till the close it will likely be a record breaker. The vines never looked better or the tomatoes finer," said Mr. H. M. Jordan, secretary of the association. The season lasts from three and one-half to four months. The association last year controlled about three hundred acres of tomatoes and shipped sixty-eight carloads of the vegetable. This year they have nearly 400 acres and will perhaps ship 75 carloads.

The Coast

In Colorado prairie dogs have been destroyed with bisulphide of carbon gas in a manner similar to the tests in Minnesota on pocket gophers.

More than seventy families are now settled on the farm units of the Yuma Indian Reservation, in Imperial county, and improvements are making rapid progress.

Australia leads the world in sheep farming with 87,000,000 head. Argentina has 7,500,000; Russia, 58,500,000; United States, 54,700,000; United Kingdom, 30,000,000.

The Commercial Club of Elgin has decided to hold the third apple show Nov. 3-5, to be known hereafter as the Eastern Oregon Apple Show, open to exhibits from all eastern Oregon.

It is reported that the Snake River Irrigation company of Boise has been financed and that the contract for a new dam has been let. This work involves the expenditure of $500,000.

A cattle-breeding station has been established in Alaska, to develop the milking qualities of the Galloways, as they are said to be the most hardy and best adapted to the climate of that country.

At a recent meeting the South Texas Citrus Growers Association elected the following officers. E. S. Stockwell, Alvin, president; R. H. Bushway, Algoa, vice-president; J. H. Arbenz, Sarita, secretary-treasurer.

The largest apple of the Jonathan variety ever found in Walla Walla valley was taken by W. S. Offner, the well known fruit man, from his orchard. It grew on a three-year-old tree and weighed one pound and seven ounces.

F. S. Baldwin of Tempe, Ariz., has in his orchard about two acres of Bartlett pears. He says the crop this year is by no means exceptional, only an average, yet from these two acres this year he will harvest not less than twelve tons of pears.

Go way from home to get the news: The Farming World of Maine says tnat a new farming is being developed in California, that of gathering seaweed. Last year $100,000 of this crop was shipped to China as food for oxen, sheep and pigs. Who are the people in this business?

The harvest of the cranberry crop in Coos county, Oregon, is nearly over and the yield this year is big. The average of all of the cranberry marshes in that locality this year will be about 400 bushels an acre. Allowing $1 a bushel for picking and packing this gives the grower a profit of $800 an acre.

The first annual Pacific Northwest livestock show will be held March 20-22, 1911, at the Union Stock Yards, Portland. The officers of the association are: president A. J. Splawn; vice-presidents, James J. Hill, Robt. S. Lovett, Wm. Hanley Burns, Frank J. Hagenbarth; general manager, D. O. Lively; secretary, N. C. Maris.

An experimental shipment of apples to Southampton from the Wenatchee section of the State of Washington, made in 1908, proved so successful in a financial way, that in 1909 the same dealer made another shipment, this one amounting to 20,000 cases. The fruit was neatly packed and went on the market in first-class condition.

The Country Gentleman calls attention to the fact that the increasing scarcity of swine was illustrated at the Oregon State Fair at Salem this year. The exhibitors not only sold all the pure-bred hogs they had with them, but many of them of established reputation sold young boars and spring gilts at home, and there were several instances in which breeders who would not part with their bred sows were asked to put a price on the unborn litters.

Coulson's

EGG FOOD

If you were going to erect a large building, you would consult an architect—if you wanted some legal papers drawn up, you would go to a lawyer—because these men have made a special study of their respective professions.

The same principle applies to the feeding of your chickens. Presumably you have not the machinery or formula for making an egg food so that it will be just what your hens need.

That's why you should buy COULSON'S EGG FOOD. It is the result of years of study—it is scientifically mixed by experts with the right proportions of the various ingredients to give a balanced ration.

COULSON'S EGG FOOD means a healthy stock, with great laying powers and eggs of quality. Saves you the time of mixing—provides a better feed—makes more eggs—means more profit, as COULSON'S EGG FOOD more than pays for itself, through making hens lay to their full capacity.

It is especially advantageous to use it at the present time, when the price of eggs is beginning to increase, and when also you are anxious to have your hens in good condition for the molting season.

Hens eat only what they like, but there are many foods they must have, and which must be mixed with their regular food so that they get the desired quantity. The only way the food can be mixed is by improved machinery—that's why you should feed COULSON'S EGG FOOD.

Get it at your dealer's; anyway send for our Catalog which tells about the famous Coulson products and gives valuable information about Poultry Raising.

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S. California

If you want your hens to lay more of those high-priced eggs, feed

West Coast Egg Food

Nothing better made for the purpose, and the price is now only $1.80 for 75-lb. sack, or $45.00 for a ton. If not sold by your dealer, sent to us. Or, if you are distant from Los Angeles, and have good grain products cheaper than to ship them in, you can make your own Egg Food as good as anybody's.

Egg-More Booklet

tells you how. It is free. Send for it. Send us addresses of 5 persons in your vicinity who have fowls, and we will send you an Anchor Egg Separator. Or, for 20 addresses, we will also send The Poultry Manual, a book well worth 50c, both postpaid.

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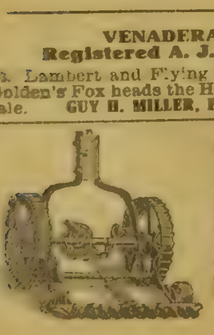

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Will cut tall grass and weeds and do all the trimming along the walks and drives. Your dealer should have them—if he has not drop us a line and we will send circulars and prices.
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Single Comb Black Minorcas (Northrup Strain), R. I. Reds (Tompkins Strain), also trio White Minorcas, and Rose Comb Black Minorcas.

Eggs for hatching and baby chicks.

C. U. Chamberlin, Los Gatos, Cal.

Practical Poultry Culture

BRAIN AND BRAWN.

"Men in Action" is the title of a letter appearing in the October number of the World's Work, in which Rev. Frederick Lyne, owner of Lynehurst ranch, gives some of his experience in establishing a poultry farm near Tucson.

The letter was written two years ago and therein contains the statement that the writer has 2,000 chickens on the ranch. This number has been increased and to-day Lynehurst is the largest poultry farm in the southwest, there being over 4,000 chickens on the ranch.

The letter, as it appears in The World's Work. is as follows:

Here is a tale—not of woe, but of conquest. You have heard from me and from others that I have been working for years on the hen problem. Of course, hen fever is likely to develop in any man, rage for a time, and then die out. In my case the fever was never of the raging sort. My inspiration to work with poultry came from deeper sources. I have been waging a tireless warfare for the financial freedom of the family. No matter how weak in body I have never been infirm in purpose. I know there is no cure for me; that I can never again know what a man really feels like who breathes and fills his lungs. With me the question is simply—how long can I stay here with the family? There is a flame that burns within the breast of some "lungers" that seems to resist the blasts that shriek for its extinguishment.

But I have not been content merely to fight tuberculosis. I could not make a business of invalidism. I would blush to join the ranks of those valetudinarians whose graft is to enjoy poor health; so I resolved that I would show my children a father at work. I could not command success, but I would show my boy how bitterly his grasping daddy fought to teach him by daily example the dignity of labor. I have won my fight after six years of effort.

Now I can imagine what sort of a hen coop you think I have here, but I will tell you about it. Six years ago I began with 24 hens. Year after year I forged ahead until to-day I have 2000 standard-bred White Leghorn hens, and every chick is of my own hatching! Imagine 2000 beautiful white hens in procession on your main residence street!

I repeated the blunder of sending thousands of miles away for eggs when better ones could be had nearer home, but as I was closer to the natural hatching season than when I first experimented, the results were better. This time I hatched White Rocks only. The eggs came from a well-known eastern breeder, and while I was disappointed in the number that hatched I was greatly pleased with the quality of the few that came. All chicken folk will admit that the White Rock is a fine chick. He grows fast and he is a chummy little fellow from his youth up. I believe I took 100 fluffy chicks from that incubator. Previous experience had taught me how to detect deformities in chicks, and I was pleased to see the little rascals standing squarely on their feet and to watch with keen delight their pretty shoe button eyes.

Yes, of course, I was yet very foolish about chicks. For hours I sat and watched them play, and often I would drag the rest of the family from the house to the brooder to see the chicks at football with a piece of meat. While watching them scuffling for the meat, the world seemed young to me and I forgot every unpleasant thing—forgot that anybody, anywhere, was sick. Before me was life, young, hustling, scrapping, tugging, and I was held longer by those little fellows without fatigue than I could have thought possible.

The energy that drove me on was only in a limited sense physical. A quick perception of just what part of the work would break me down helped, and I always managed to have someone with a stronger arm where I knew mine would fail. But the secret of this poultry proposition is found in the cells of the brain, not in the muscles of the arm. Only a little brawn is necessary in the business. I could buy that, but I cannot hire tive to heat or cold that it cantells the hand or face that becomes so sensitive to heat or cold that it can tell in a moment if a little chick is gasping from heat or becoming chilled from cold. I cannot buy "gumption."

I have been above measure obstreperous. I have refused to be "a dead one," and here goes a letter to you, six years after my proper funeral should have been held, which plainly indicates that I have not been even a good living corpse. Six years ago my friends set me in a chair and watched that chair. Yet they often find it empty—lo! I have gone. But later I return. I have been merely off, feeding the chickens.

The really vital thing in the fight against tuberculosis is to keep the malady below the collarbone. The "white plague" is a disease of the lungs—not of the brain. While the enemy's sappers and miners are undercutting and blasting out the lung tissue, a man with a clear head may conquer a kingdom, plant a vineyard, or establish a poultry farm—if he has any "ginger."

PRESERVATION OF MANURE.

Fresh poultry manure has approximately twice the fertilizing value of cattle manure, if a comparison of the two products is based upon their nitrogen content. The nitrogenous compounds contained in poultry manure, however, are very unstable, and decompose readily into ammonia and volatile ammonium compounds. Consequently, unless proper care is taken, large quantities of nitrogen, which might be used for fertilizing, are lost.

Several methods have been suggested for retaining this nitrogen. They consist in mixing with the excrement either an absorbing substance or an acid compound which will chemically combine with the ammonia as fast as it is formed.

Experiments carried on at the Maine Experiment Station showed that poultry manure, untreated, as well as that mixed with sawdust, lost half of its nitrogen in the course of six months. Where the manure was stored with half of its weight of gypsum (land plaster) it lost a third, while that mixed with an equal weight of sawdust retained all of the original nitrogen. Equally good results were obtained by using from one-third to one-fourth of the weight of the manure of either kainite or acid phosphate.

From the standpoint of the mechanical condition, the mixture with land plaster gives the least desirable product, although the addition of sawdust aids materially in preventing the formation of hard cakes.

When the manure is to be kept only a few days before applying, good results may be obtained with dry loam or peat as an absorbent.

The absorbent used should be sprinkled daily, in the required quantity, on the floor of the hen-house; from which, in combination with the excrement, it may be removed when desired.

The difficulties experienced in spreading poultry manure, on account of its sticky consistency, may be obviated by mixing with loam, peat or common stable manure. For economical use, it should be spread in relatively smaller amounts than other manures.

The admixture of lime or wood ashes is not advised, since decomposition is sufficiently rapid without their use.

It should be borne in mind that each of the absorbents suggested is in itself of value as a fertilizer; the least valuable is sawdust. Consequently the requirements of the soil should govern to some extent the choice of the absorbent used.—Rodney M. West, University Farm, St. Paul.

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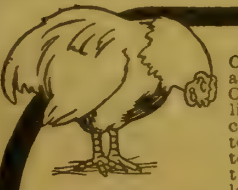

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LAY OF THE LAST COCK.

The night was long, the wind was cold,
The rooster was infirm and old,
His battered comb and feathers gray
Seemed to have known a better day.
The last of all the birds was he
That roosted in the leafless tree.
For, well-a-day, his race had fled,
His feathered brethren all were dead,
And he, neglected and oppressed,
Longed to be with them, and at rest.
A monarch he, when in his prime,
But now, at length had come his time.
A worn-out chicken, scorned and poor,
He swayed, then fell to rise no more,
And gave, to please a coyote near,
What once was fit a king to cheer.

POULTRY TALK.

The way one keeps his fowls is generally the way the fowls keep him.

The day of crossing breeds is a thing of the past. We now have utility pure breds.

Work up a strain of hens that will lay. Save the eggs from the best layers, and set them.

The fowls that are small for their age should go now. Their room is of more value than their company.

Hens dread to get into dirty nest boxes. They won't do it if they can help it. Why don't you see to this, right off?

Never change to a new breed simply because extravagant claims are given. It is better to try to improve the old ones.

The professional poultry keeper hardly ever neglects to furnish his fowls grinding material. Many a farmer thinks that his hens can get along without teeth.

The experienced poultryman breeds only from his best winter layers. It is then when prices are at their best, and profits are to be counted upon in the poultry business.

Start the trapnests so that it can be known which are the best winter layers. Almost any old hen will lay in spring and summer; it takes a good hen to lay in late fall and winter.

No draft should be allowed at any season of the year, but more care must be exercised during the fall and winter months. Even a small knothole sometimes works havoc.

The interior of the chicken house should be thoroughly sprayed every square inch with kerosene into a gallon of which two tablespoonsful of carbolic acid should be mixed.

The last egg laid before a hen goes to sitting will often be so small that it will have no yolk at all. There is an old notion that it is bad luck to bring these small eggs in the house.

A good coating of whitewash on the inside of each house will help considerably in getting rid of vermin. Take several inches of dirt out of the houses and replace with new, clean earth.

It is a too common practice to inbreed. Don't do it. It is easier to secure good cockerels now than it will be later in the season. Get them now and you will have them when needed.

Carbolic acid with kerosene or lime or any of the prepared dips for killing lice and mites will aid in the destruction of the pests, and a little of the acid in the fowls' drinking water will ward off disease.

A nest that suits the turkey hen first-rate may be made by turning a salt barrel on the side. Put straw in the hollow, and a nest egg, and cover the barrel over with brush, if you have it handy.

Do not try to winter more hens than you can care for well. It has been proved by repeated experience that a few hens kept well will do much better than a large number poorly housed and fed.

On the first of January, this year, the value of the live stock of the American farmer, exclusive of poultry, reached the stupendous total of $5,139,000,000, a sum equal to the total gold production of the entire world for the past twenty years.

Rake up the litter and rubbish that have accumulated in the runs, and then spade or plow them up. If there are double runs to each house, sow one of them into rye for winter green feeding. Don't delay the sowing of rye much longer.

Don't forget to shut up the breeding ducks at night. This is the only certain way of securing all the eggs from these hap-hazard fowls that lay anywhere and everywhere. If they are given their liberty before eight or nine o'clock in the morning, some of them will be very apt to lay in the water or under the barn.—Farm Journal.

Do not allow the pullets to roost in the coops where they were raised. The cooler the weather gets the worse they will crowd. They will suffer from the heat, and when let out these cool mornings are apt to take cold, and roup is the next thing on the programme. The pullets expected to lay this month should be roosting in a comfortable house at this time.—Farm Journal.

Warm conditions favor quick moulting, and the house in which the moulting hens roost much be warmer than at other seasons of the year. Make the house just as warm as possible during this stage, but provide good ventilation. Above all things, keep the hens dry when they are partly bare of feathers. With a full coat of feathers, a hen can stand a heavy rain without inconvenience, as the feathers on her body are so arranged as to readily shed water. But with only a few feathers, she is quickly wet and chilled by even a small shower, and a hen wet to the hide will soon become a sick hen, at this stage in no condition to meet the shock. While the new coat of feathers is growing the hen needs all the possible warmth and nutrition to keep up her bodily heat and to keep the animal system in good working order.

GOOD BIRDS WIN.

At the late San Jose show in competition with Buff Orpingtons imported direct from England, Mr. and Mrs. W. E. Sullivan of Agnew, Cal., won 1, 2, and 3, on pen; 2, and 3 on cock; 1, and 3, on hen; and 3 on pullet. Four Club specials from the Nat. S. C. B. O. Club, Am. Orp. Club; two Club Specials from California Orpington Club, and Special Trophy for best pen bred and owned in Santa Clara county, and also Silver Cup for best display of Buff Orpingtons in the show. The "Mercury" reports the opinion of one of the foremost breeders of this breed, as follows: "This is a show of quality; to win a prize here means that one must have the goods." The Sullivans have bred Buff Orpingtons for ten years and in the opinion of Mr. Venn, who handled the show, "they have as good fowls in this variety as can be produced anywhere."

LAYING EGGS ON A SUNDAY.

Consistency is a jewel. One Sunday morning a minister's wife saw her son chasing the hens with a stick. She went to the door to investigate and heard him say: "I'll teach you to lay eggs in a minister's family on Sunday morning!"—Young's Magazine.

The theory that a nurse crop will prevent the weeds choking the alfalfa is apparently, as a rule, not well founded. In the first place alfalfa should not be sown on foul land, and in the second place proper disking and harrowing, at near intervals for four or six weeks before sowing, will disturb or kill far more weeds than cen any nurse crop. Besides, the oats or barley sown as a nurse will, when cut, leave weeds in good growth, or dormant and ready to spring up as fast or faster than the alfalfa. No nurse crop is ever used with fall sowing. When ground has been thoroughly prepared for the preceding crop, and then properly cared for, and made ready for alfalfa by the preliminary weed destruction, it will be found advisable to sow alfalfa alone, even in the spring.—From Coburn's "The Book of Alfalfa."

EGG MAKER

I Have Ten Hens and Get Ten Eggs Each Day

by feeding "Lee's Egg Maker." Without waiting another day, go out and count your hens—count them carefully. For a week keep an accurate daily record of the eggs you get. The guarantee below means *you*.

WE GUARANTEE

that no matter what you are feeding, and regardless of the number of eggs you are getting at the present time, if **Lee's Egg Maker is added** to the daily ration — [illegible] — the increased egg yield [illegible] than pay the cost of the Egg Maker, cost of labor required, and **100 per cent profit** on said labor.

We don't care what your hens are doing *now*, we ask you to buy Lee's Egg Maker on our *guaranty* of an *increased* egg-production at a *reduced* feeding cost. Could we make you a better proposition?

The amount of good *digestible* protein is what counts for results in poultry feeding, and America's big feeders say Lee's Egg Maker contains more *digestible* protein than any other poultry food they can buy.

Lee's Egg Maker is almost entirely a meat food and with an actual tested protein feeding value in *excess* of *80* per cent, and you'll find in it the essentials entirely lacking in other prepared poultry food. The best feeding authorities in the country endorse it—and *use it*. *You* can't afford *not* to feed it, whether you have 10 hens or 1000, the proportionate profit would be the same.

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We are shipping at present about 7500 baby chicks per week, of the Reds, Minorcas, Leghorns (White and Brown), Barred Rocks, Buff Orps., etc. Whatever you need in our line we will be glad to make a price on. If we can't sell you better poultry for less money, don't buy from us. INVESTIGATION is all WE ASK.

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Reference: Any Poultry Paper in the West

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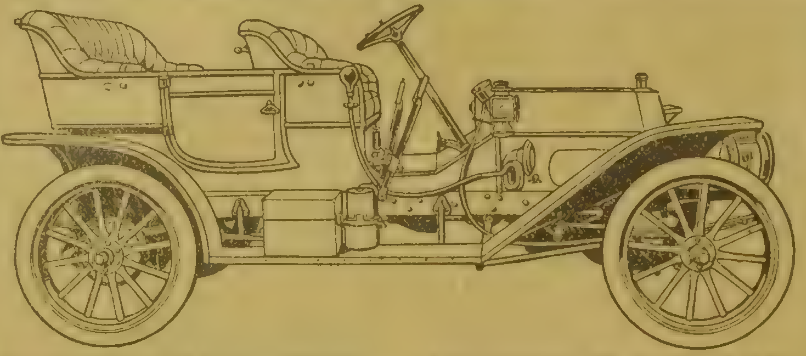

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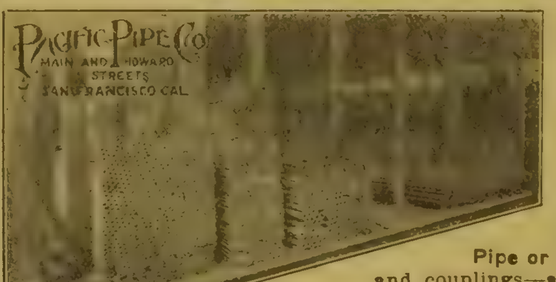

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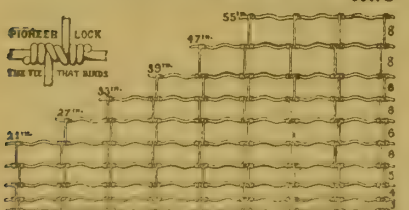

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AGRICULTURE

WHY FARMERS SHOULD ORGANIZE.

Farmers should organize because their interests are so nearly identical.

Farmers have interests which should be protected; this can best be done in an organized way.

Organization presents the best methods of business dealing; the farmers should have the best.

Organization not only demands attention, but commands it as well.

Organization of capital and labor has made it impossible for the farmers to obtain greatest results in an unorganized way.

Organization demands organized competition.

Organization is necessary to progress, so, farmers, have a progressive organization.

Agricultural industry furnishes the majority of the nation's wealth and is the basis of all wealth, why then should not agriculture be the best protected of all industries? Organization insures protection.

Organization of interest insures respect, influence, recognition and power, the farmer needs these things that he may be able to receive a square deal.

By organization in a compact conservative body the farmers can secure wise and equitable legislation, and be assured that the interests of agriculture are fairly represented where lawmakers meet.

The farmers in every community should have a permanent economic organization which recognizes the rights of all men and insures to them justice, and to the wife equal influence and dignity, and where all may meet in advancing of a common cause.

To the American farmer no organization can be more highly recommended than the Grange, because it furnishes the social, educational, fraternal, co-operative and legislative features so essentially necessary in completing a well balanced farmers' organization in whose meetings all can find something worthy of their effort.—The Grange.

AVERAGE RATE OF SEED PER ACRE.

Alfalfa, 30 pounds; Barley (in drills), 1½ bushels, (broadcast), 2 bushels; Beets, 9 pounds; Blue Grass, 12 pounds; Burr Clover, 10 pounds; Cabbage (outside), 12 ounces, (in fromes), 4 ounces; Celery, 8 ounces; Japan Clover, 25 pounds; Lettuce, 3 pounds; Mustard, 1 peck; Onions, 7 pounds; Oats (in drills), 1½ bushels, (broadcast, 2 bushels; Rape, 3 pounds; Rye (in drills), 1½ bushels, (broadcast), 2 bushels; Rye Grass (Italian), 50 pounds; Wheat (in drills), 1 bushel, (broadcast), 1½ bushels; Turnips (in drills), 3 pounds, (broadcast), 5 pounds; Vetch, 30 pounds.

ROUND BALES OF HAY.

The other day I saw for the first time a hay-baler that turned off round bales and I naturally became stuck on it at once. It is easy to see that the cylindrical bale is easily handled, fits in more compact space than the oblong bale and by reason of a hole through the length of it the hay continues to cure even after it has been packed. It is tied with twine instead of wire, which makes the bale easy to open and avoids the danger of small bits of wire geting into the throats of stock and strangling them. Baling directly from the windrow without stacking, this machine puts up 40 tons a day with only six men at a cost of $80. This is quite a saving over the old-style machines.—A. Homan, in Field and Farm.

A billion dollars for this year's cotton crop of the United States is figured out by statisticians, whose estimate is made on a 12,000,000 bale basis and the price at last year's average—$73.41 per bale. This includes about $125,000,000 for the seed.

VETERINARY

Answers in this column by Dr. R. T. Whittlesey, are without charge. For immediate mail answer remit $1.00. In writing questions give full symptoms or particulars of injury of animal.

Skin Trouble.

I have a valuable mare that has skin trouble which some have pronounced mange. I have been using some simple remedies, but have failed to benefit her. She is continually biting or scratching; bites the hair off.—M. C. W., Beaumont, Cal.

Mange in horses runs a very rapid course. In two to three weeks the hair all falls out. The trouble spreads from one to another and they are crazy with the itching. Your mare is more likely troubled with eczema. A solution of formaldehyde and water, two ounces to the gallon, well rubbed in with a brush once a day, will probably stop it.—R. T. W.

Quarter Crack.

My driving horse has a quarter crack which I can not cure. The horseshoer burns it and it grows part way down and then cracks open again. Is there any way to make it grow down and not break open again? —J. C. W., Hemet.

The horse has a weak, thin wall which must be protected. Have the wall on each side of the crack for one-half inch thinned down nearly to the blood, but do not cut clear through. At the top crosswise of the crack burn a groove clear through the horn. Fill the crack with tar and cover with adhesive tape. Shoe with rubber pads. The rubber pad will protect the hoof and prevent another crack.—R. T. W.

Lame Horse.

Please give me information about my horse that is lame on the front leg, I think from a splint. He gets very lame after being driven a few miles but gets over it if he stands in the stable a few days.—X. Y. Z., Riverside.

There are different ways of treating splints. The best is by cutting through the skin at the bottom of the splint with a knife made for the purpose, with a very narrow blade. Run it up under the skin flatwise, then turn the edge inward and cut into the splint. Make several cuts into the splint but only one hole through the skin. Another treatment is with a sharp pointed firing iron to burn six or eight little holes deep into the splint, then blister with Gombault's Caustic Balsaam.—R. T. W.

HOMESTEAD ENTRIES IN CANADA

Consul Harry A. Conant, Windsor, Ontario: Homestead entries in Canada for the six months ending July 31, 1910, show an increase of 11,852 over the similar period of 1909, the entries numbering 33,416. For July alone there were 4,260 entries, of which 1,248 were made by Canadians residing in Canada, 58 by Canadians returning from the United States, 959 by United States citizens, and with the exception of 34 entries the whole of the remainder were made by persons from the British Isles and northern European countries, in which the government is carrying on immigration work. Of the entries from the United States, over one-half were made by people coming from North Dakota and Minnesota. Patents were issued in July, 1910, for 248,223 acres of land, as against 186,013 for the corresponding month of 1909.

The acreage under cultivation for principal crops in Australia for the year 1908-9 bore favorable comparison with the previous crop year, the acreage last year being 9,892,393 acres as against 9,355,092 the previous year.

John L. Jacquot of Appleton, Wis., has made what is thought to be the biggest cheese ever made. The cheese weighs 4000 pounds and is made for exhibition at the National Dairy Show in Chicago.

Queries and Replies

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Renovating a Walnut Grove.

I have acquired a walnut ranch of some acres which is in a very poor condition. What would you advise me to do to it, to insure a good crop of nuts for next year? The trees are 15 or 16 years old, some are larger where the soil is rich, others are small where the soil is poor. How much barnyard manure would you advise me to give to each tree? Also what kind of fertilizer and how much of it would you advise to be given to each tree?—A Young Rancher, Pomona.

Under the most favorable conditions it will require some years to bring a neglected orchard back to a profitable growth. In this case we would advise putting in a crop of vetches for turning under as a green manure just before the blooms burst. As supplemental, commercial superphosphate at the rate of 500 pounds to the acre can be commended. Nitrogen cultures will also be beneficial applied to the seed before planting, cultural directions for which usually accompany it from the seed stores.

Soft-Shelled Duck Eggs.

Could you tell me what is the trouble with hens or ducks when they lay soft shelled eggs? I have lime, oyster shell, sand, charcoal and ashes be-before them at all times.—A Subscriber, Mentone, Cal.

Soft-shelled eggs are due to a want of lime in the food, or to the birds being overfat, or to the birds inability to retain the egg until fully developed. About the only remedial measures are a reduction of food and exercise calculated to strengthen the bird.

Milking the Heifer.

Will you please advise me as to the milking of a heifer till calving time? My heifer is kept on green pasturage with alfalfa hay morning and night. Recently her milking has fallen off rapidly from two quarts to about a pint at a milking. She should come in fresh in three or four months. Some local authorities advise milking a heifer right up till she calves, as having a great influence on her subsequent milking capacity. Kindly advise me through your columns on this point, also whether the above mentioned feeding is ample for a cow out of doors, day and night, in the San Joaquin Valley.—Fred'k. F. Brush.

Milk her to within six weeks of calving time and then dry her off. The fact that she has dropped in her milk shows she is not one of the class that will not dry off. It is better to have a cow dry for six weeks but some will not go dry without injury to themselves. As to the feed if the heifer is fat and in good order she is getting enough, if she is thin then give her a little grain, a quart a day of mixed rolled barley and bran, cutting down the bran as fast as the cow will let you. They eat the bran best but it is not needed when alfalfa is fed.—M. E. S.

Possibly Thrips.

I enclose lemon twig showing badly curled leaves. What is the cause and remedy?—Subscriber, Lakeside.

The lemon leaves show a curling slightly similar to the curl leaf of the peach; also show some black scale. Of course, the latter had nothing whatever to do with the curling. The leaves have been shown to several and there is declared to be no fungous trouble present, though the scabby appearance of some of the leaves might at first lead to that impression. The curling is probably due to the work of thrips.

Dairy Question.

I have been told by several persons that if a cow is spayed while fresh, she would give a good flow of milk for many years continuously. If this is true when is the best time to spay?—E. L. D., Pomona.

Spaying is hardly to be advised where only a single animal is operated on. The lack of skillful operator and the cost would make either a bar to the work. It is a delicate operation and if poorly performed the cow dies. If successful the cow does not continue in milk any longer than an ordinary farrow cow. The cost of operation and the loss of milk at the time would offset any annoyance in having the cow come around in the ordinary way. I doubt if the butcher would pay more for the beef than if the cow was simply sold when dry.

Symptoms of a Cold.

I have a turkey whose face is swollen just back of the beak and under the eye. The swelling isn't hard, only seems like a puff. We put salve on it every morning but the swelling don't seem to go down, neither does it get worse. She has a good appetite and I feed her a mash of equal parts of alfalfa meal, bran, and shorts, half as much dry beef scraps. She eats about a quart a day.—Mrs. M. D., Santa Rosa.

The symptoms you describe often result from a cold, just as cold sores do with us poor humans. See last week's Cultivator for remedial suggestions under the head of "Danger Signs" in our poultry department.

Hog Tankage.

How can I convert dead carcasses, bones and butcher refuse into tankage for my hogs? There is considerable butchering done in this locality during the winter season and last winter 25 or 30 head of cattle died of bad weather and close range. It may not happen again this winter, but if it should I would like to do something of that kind with the carcasses. I live in the mountains some distance from the railroads and as I am raising a good many hogs cannot afford to haul the amount of tankage they should have and have gotten along without it so far.—Frank C. O'Kelly, Vineyard, Cal.

The proper preparation of animal foods for hog tankage is not without its difficulties on the ranch. as it requires cooking and grinding appliances. Usually, the carcass is cooked or steamed for several hours in pressure tanks, which is said to destroy disease germs, its grease is drawn off and the greater part of the moisture drawn off or evaporated. After being dried it is ground—in that state somewhat resembling dark wheat shorts. It might be feasible to sun-dry the product after cooking. Then some means for crushing or grinding must be provided. It should be used in comparatively small amount, not over 4 to 16 ounces to an animal each day. It may be given dry or mixed with other feeds.

Paraffining Orange Blossoms.

We are subscribers to The Cultivator and get much useful information from its pages. I noticed the question of M. F., of Pomona, as to how to preserve flowers with paraffine. Melt the paraffine and keep it quite warm. Use sufficient so that the bunch of blossoms will all be covered. As you hold the stem between the fingers, dip the blossom down quickly in the paraffine, then shake so that no drops will hang to the petals. Cool by blowing on the blossom and shaking a little until the wax seems to have cooled. If it gets too cool it shows on the blossoms. Dip one at a time. I have preserved perfectly calla lilies, roses, forget-me-nots and many other flowers in this way. I hope this will help.—M. F., Oakland.

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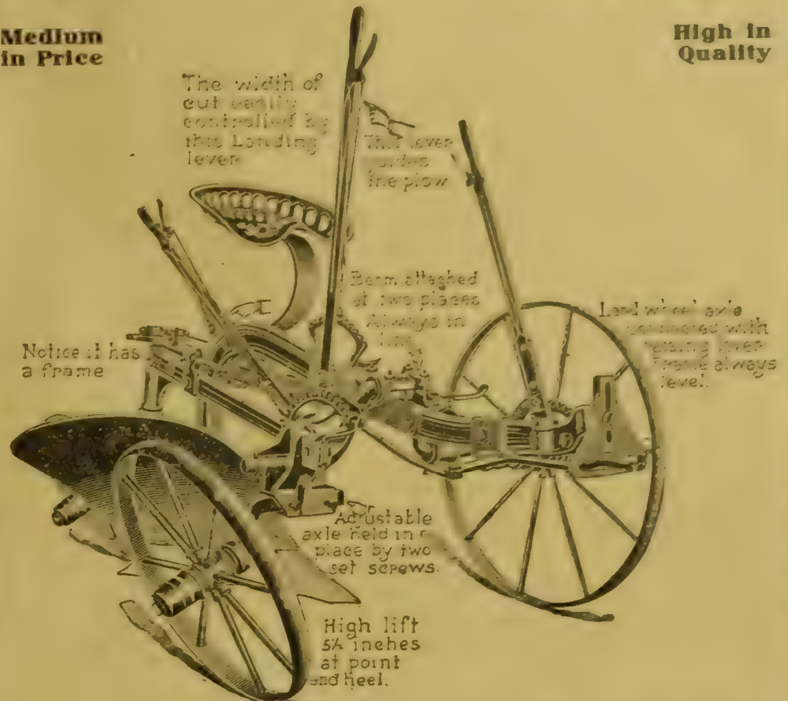
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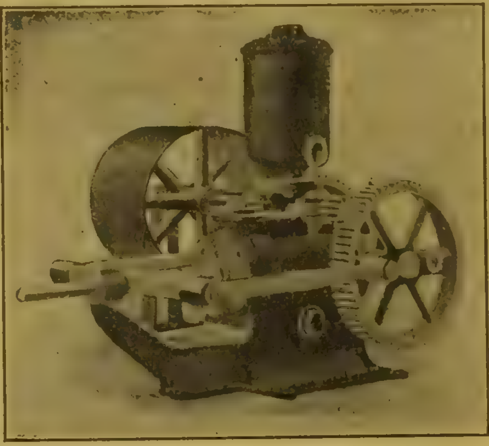

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Measuring Water.

I wish to ask regarding measurement of water over the Cippoletti weir. "A" contends that water should be measured over edge of weir opening; "B" that the measurement must be made on a stake set two feet back from the opening, top of said stake being on a level with the edge of weir. What is a legal miner's inch in California?—Subscriber, Orange.

"A" is wrong. The contraction of the water as it pours over the weir would tend to give a much geater quantity if measured at that point. See Cultivator of March 31, 1910, for particular instructions in building weir. Under the Cippoletti table, instructions are to place the measuring peg back from the weir in still water, far enough so that there is no contraction as the water draws down where it starts over the weir; two feet is probably sufficient. It must also be remembered that a "stiller" above prevents approaching current affecting the flow.

A miner's inch in California is usually considered to be sufficient water to fill an opening one inch square and raise the head four inches above the center of the aperture. We believe, however, that the legal miner's inch is under a six-inch pressure.

Wood Ashes.

What is the effect of wood ashes mixed with soil around young fruit trees? Soil is light.—Subscriber, Anaheim.

Beneficial, though, of course, they could be used in excess so as to cause injury, but notwithstanding the fact that California soils are well supplied with potash, the addition of small quantities usually gives porof of the advantages of its use.

Potecting Against Frost.

What is the best method of protecting young orange trees against frost? The trees were set out in '09 so that this will be their second winter. I am advised by some to cover the entire tree excepting the north side. Others say to cover the trunk with burlap or paper.—Inquirer, Reedley.

We assume these trees are planted in orchard form so that they could not be protected by the lath-house method followed in nurseries. The more common plan in citrus sections is to stand cornstalks around the trunks, the tops of the stalks reaching up into the tops of the trees. This protects not only the trunks but many of the branches. Of course care must be taken not to enclose the leaves too tightly or the tree might be smothered. While the projecting branches may be injured by frost, yet they will give enough breathing space so that the tree will get through the winter in good shape. A good supply of newspapers wrapped about the trunk will answer, though not nearly so well. The trouble is that they lie too close and do not admit enough warm air about the trunk. This is much more work but little more satisfactory. Care should be taken to cut string holding the corn stalks in place before spring growth begins.

Thrips.

Thrips are curling the leaves of my orange trees. Can you suggest a spray which will destroy them?—R. B., Visalia.

This query being from Tulare county, and knowing that Commissioner Schulz of that county has wide experience in the treatment of thrips, it was referred to him. He writes:

"I will say that the only method so far used in this section is to spray with the following: One gallon blackleaf tobacco extract and two gallons of lime and sulphur to 150 gallons of water, and the best results are obtained when sprayed on with a pressure of about 180 pounds. This, if thoroughly done, will bring results, but no half-way work will do, and it should be applied several times, at an interval of about ten days. The curling of the leaves as stated by your correspondent is a characteristic mark of the work of thrips."

Centrifugal Pump.

In reply to the query of L. G. H., San Diego, in the issue of September 29th, will say that the Lane & Bowler Company, 2116 Violet street, Los Angeles, claims to have a centrifugal pump which requires no pit.—Subscriber, Covina.

Soil Maintenance.

I think of sowing some kind of leguminous crop in my peach orchard. The soil is deep and fertile, similar to that on the state farm. Are such crops likely to be of value? If so, what would be best to sow, vetch, Melilotus clover or Canadian field peas? Would mineral fertilizers be of any value? The soil is good and the trees seem healthy and I want to keep them so.—J. J. R., Winters.

If we were planting a crop for geen manuring, our first choice would be vetch, closely followed by Canadian peas. It is desirable to get such a crop in early, so that it will attain sufficient growth to be plowed under before the winter rains fully cease. Green manuring can be commended both for fertility and the physical action it has on the soil. Mineral fertilizers should be used with discretion, and only after one thoroughly understands the character of the ground to be treated.

Cover Crops.

Touching upon the decadence of orange groves which is already beginning to show in some sections, I wish to say that it is no wonder when the care that is being given them is considered. I remember that last year you invited some fruit growers to give their methods and experience with green manure crops, also with cultivation, and there was only one out of the whole lot that was anywhere near right and he was only quarter right. However, as he was on the right track, I wish to call attention to his methods. I believe his name was Gerald Geraldson, and that he lived in Newcastle, Placer county. I do not note that the experiment stations or the agricultural college professors have taken any notice of his methods. They seem to be a radical change, but I feel they are well worth trying. We treat our trees in a very artificial way, very much as we do our stomachs. Mr. Geraldson's methods appear to me as coming back nearer to nature and consequently will restore fertility at a minimum of expense.—Paul Thomsen, Aquanga, Riverside county

Red Spider Again.

I am enclosing some clematis leaves which show a disease that attacks the vine every summer. Can you tell me what to do for it?—L. H., Esparto.

This inquiry was forwarded to Dr. J. Eliot Coit of the Southern California Pathological Laboratory and he writes: "As far as I can see, the chief trouble is red spider, and I would recommend dusting with sulphur in the early morning when the vines are wet with dew."

Government Land.

I have land in Harney, Oregon, near the Nevada line. Can any of your readers inform me as to conditions in that section?—Subscriber, Santa Ana.

This we will pass to our subscribers as we have no knowledge whatever of that section.

Destroying Stumps.

Will saltpeter kill an apple tree if it is placed in hole bored into the heart of the tree? I want to destroy 300 trees.—F. E. B., Cave Gulch, Santa Cruz county.

If the inquirer refers to boring holes into the heartwood of the live, standing tree, we think this would not kill it, but will be pleased to hear from our subscibers on this point. When the tree has been cut and a vertical hole bored into the stump and filled with saltpeter, it has been claimed that it burns much more readily after a few months. Others have denied this and claimed that use of kerosene is to be preferred.

Business Notes

DEBTS ARE DEBTS.

The Supreme Court of Michigan, in an opinion delivered September 28th, held that International Harvester Company of America is not debarred from collecting its outstanding debts by any plea that it is a "trust." The circuit judge decided the other way, but his decision was reversed; and the defendants will be compelled to settle their accounts with the company. The facts in the case are that the International Harvester Company of America, several months ago, began action against some dealers to collect a balance long overdue. There was no equitable defense against the debt, but the defendants hit upon the novel plan of setting up the claim that the company was a "trust," and that this was a bar to the collection of the amount due. Strange to say—a lower court sustained this claim, but on appeal the Supreme Court reversed the decision and ruled that the plea that a plaintiff is a "trust" is not a good defense.

THE CEMENT AGE.

We are passing out of the iron into the cement age. In the decade 1870-79 there were produced in this country 21,885,266 tons of pig iron and 22,000,000 barrels of cement. In the decade 1900-09 the production of pig iron reached 197,807,609 tons and that of cement 384,000,000 barrels. At that rate of increase cement will soon hopelessly distance iron and be entitled to recognition as the great utilitarian product of our age.

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For Sale—El Cajon Grant Land. In the heart of El Cajon Valley, 30 acres of choice vineyard, large house, cottage and barn; trays, boxes, etc. Close to proposed electric line. S. B. Hawley, 1548 D St., San Diego, Cal.

25-Acre Ranch—With buildings, water, some fruit, close in Santa Rosa. Sell all or part. Albert Bacon, R. D. 5, Santa Rosa, Cal.

The Best Buys in farm lands in Central California can be had through us. Call or write Sterling Securities Co., Savings & Loan Bldg., Stockton, Cal.

FARM LANDS FOR SALE.

Tulare County Dairy Ranches Pay—I have [illegible] wells [illegible] of surface and artesian water [illegible] the surface [illegible] last but I can show you property [illegible] improvements at [illegible] and up. [illegible] cheaper land that contains some [illegible] alfalfa land and balance grazing. C. H. [illegible], Pixley, Tulare Co., Cal., or 1[illegible]3 S. Union Ave., Los Angeles.

Farms Wanted—Don't pay commissions. We find you direct buyer. Write, describing property, naming lowest price. We help buyers locate desirable properties free. American Investment Association, 12 Palace, Minneapolis, Minn.

For Sale—Quite a variety of alfalfa and fruit ranches in several counties. Also some land in good, new settlement. Send for descriptive list. Address, W. S. Ritchie, Corona, Cal.

POULTRY.

For Sale—A few choice White Rock cockerels hatched from eggs bought of U. R. Fishel, Hope, Indiana. The eggs cost me $8.00 per setting and $2.00 expressage. "Fishel's White Rocks are the best in the world." You should get one or two of these cockerels and introduce some new blood direct from Fishel in your flock. It will prove a great investment for you. Some of them are good enough to exhibit in any show. Price $3.00, $5.00 and $7.50 each. Mrs. E. E. Young, 444 East 48th St., Los Angeles.

How to Make Money—Mrs. A. Basley's New Poultry Book is just out. It is without exception the most wonderfully complete manual on the subject of successful poultry management ever written. The secret of how to raise every turkey hatched and the "Basley Formulas," now published for the first time, are worth many times the price of the book. The "Western Poultry Book" is a practical book by a practical woman. Price $1.00. Address Mrs. A. Basley, Box 77, Venice, Cal.

Hayes, R. B., Poultry Fancier and Rhode Island Red Specialist—30 breeding pens of Reds, 20 pens miscellaneous varieties. See our birds, they tell their own story, or write for circular. Eggs for sale only. Yards in Arroyo, opposite Ostrich Farm. Box 35, Garvanza Sta., Los Angeles, Cal. Phone East 1631.

Until November 15th, special mating Kellerstrass Crystal White Orpingtons, $3.00 for 15 eggs. Buff Wyandottes, the classy American bird, $1.50 for 15. Best winter layers. No more at this price; try them. Eggs and stock guaranteed. Frank Haasis, Ontario, Cal.

For Sale—Eggs for hatching. Black Minorcas, Barred Plymouth Rocks, Rhode Island Reds, and Buff Orpingtons, $1.00 per 15, $5.00 per 100. Day-old chicks, 12½c each. Also cockerels. Cash with order, or stamped envelope for reply. L. W. Neilsen, R. R. 2, Box A1, Petaluma, Cal.

Carneaux Pigeons—$4.00 pair. Guaranteed thoroughbred. Original stock purchased from Plymouth Rock Squab Co., Boston. 4 weeks squabs weigh twelve to twenty ounces. Breed ten times a year. Guaranteed mated and working when sold. W. A. Barrett, Carneaux Squab Co., San Pedro, Cal.

LOVELL'S BLACK MINORCAS
California's
Greatest Egg Producers

Pedigreed, trapnested, scientifically bred. Free circular. DAVID J. LOVELL, 5720 So. Park Ave., Los Angeles, Cal.

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WIN EVERY TIME.

A few cockerels for sale. C. C. Bonnell, State Vice-President American Black Minorca Club, 2919 Brighton Ave., Los Angeles.

I Hatch White Rocks Exclusively—Chicks $15 per 100 from a heavy laying strain of prize winners. I am booking orders now for later delivery. Can supply stock from 1 to 10 weeks old. Write for prices. J. Wesley Lord, Inglewood, Cal.

Petaluma Hatchery—Capacity 50,000 eggs. We are booking orders for spring. Write for circular. L. W. Clark, [illegible] Main St., Petaluma, Cal.

Lodi Hatchery—Just hatched, White Leghorn chicks from healthy, heavy laying stock. Booking orders for later delivery. T. C. Hawley, 504 E. Elm St., Lodi, Cal.

For Sale—Mammoth Bronze Turkey Gobblers $7.00, hens $5.00, eggs 20c each. Book orders for next season's hatching. Mrs. W. L. Duvall, Pomona, Cal.

For Sale—White Orpingtons, best utility stock. Birds guaranteed not to be related. Vallejo Poultry Yards, [illegible] Frisbie St., Vallejo, Cal.

For Sale—Several young thoroughbred bronze turkey toms for breeding. J. F. Thwing, R. F. D. 5, Box 81, Washington Park, Verdugo Road, Los Angeles.

Single Comb Brown Leghorn Eggs—$5.00 per hundred, $1.50 single setting. Mrs. E. Foran, Box 445, Visalia, Cal.

Poultry Wanted—We pay the highest market price for all the local poultry we can get, no matter how large the quantity; also fresh ranch eggs. We remit immediately. Allaway & Layton Co., 607 E. 3d St., Los Angeles, Cal.

For Sale—Thoroughbred Rose Comb Black Minorca Cockerels, Eleanore Minorca Farm strain. W. H. Fowle, Box 55, Route 1, Denair, Cal.

Pacific Hatchery—Baby chicks, incubator eggs and selected thoroughbred poultry, ranch raised. W. W. Clough, Ontario, Cal.

For Sale—Young thoroughbred Bronze turkey toms. Good strong vigorous stock. R. B. Thayer, Thermal, Cal.

Day Old Chicks—Ten varieties. Sussex Poultry Manor, Los Gatos, Cal.

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Shoes—leaders of women's fine footwear—style leaders and leaders for comfort and durability. Mayer Leading Lady Shoes give a trim and stylish appearance. They are satisfactory for all dress-up occasions, yet durable for general wear, and have all the qualities of refined footwear.

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We also make *Honorbilt* Shoes for Men, *Martha Washington* Comfort Shoes, *Yerma* Cushion Shoes, *Special Merit* School Shoes and *Mayer Work* Shoes.

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OUR SPECIAL HOLIDAY DEPARTMENT Is at your service. You may order your Christmas presents now and we will make delivery to any address you wish promptly by December 24, (or any date you desire). This service costs you nothing extra, we have arranged it solely for your convenience during the holiday season.

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We have a large supply for **November Planting.** Our long experience as growers and shippers places us in a position to give our customers the very best service possible. This should mean something to you, Mr. Buyer. The proof of the pudding is in the eating; try us with your order. We are also large growers of **Apple, Pear, Orange and Lemon Trees.** Write for prices. Address

Covina Nurseries

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Placentia Perfection Walnut

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Choice trees, 3 to 14 feet, from 20c each and up; special low prices on lots of 200 and over. If contemplating planting a walnut grove, it will be to your interest to correspond with us at once, as the stock is limited and the price sufficiently attractive to clean it out quick.

Write today.

SAN DIMAS CITRUS NURSERIES R. M. Teague, San Dimas, Cal.

When writing advertisers, mention Cultivator.

Household Department

FULLY IDENTIFIED.

It was at the baggage rooms in the Fort Street Depot. The woman had lost the check for her trunk, and, as is usual in such cases where no suspicion was entertained, she was asked to identify her baggage.

Oh, I can pick that trunk out of a thousand. It was a zinc-covered trunk, with a strap around it, and it had a big W for White on each end. It was a trunk my sister bought in Cincinnati and paid $6 for, and after she got crippled up with rheumatism and couldn't get out any more, she sold it to me for $2. There it is now. I'd swear to that trunk in Africa!"

"But about the contents, ma'am. You have the key.

"Of course I have. I had this key made in Buffalo last week. I lost the other key about a year ago, and I always believed that Mrs. Robinson's baby swallowed it while I was there visiting. The poor thing had cramps for three months after I left, and she wrote me the other day that she never expected it would be a healthy child again."

"Describe the contents," said the officer, as he pulled the trunk down.

"Well, let me see. We'll begin with the till first. There's my bonnet in the bonnet box. I paid $7 for it in Buffalo last year, and had over $2 worth of trimmings put on last week. I don't know as I shall want to wear it once while here, but I thought I'd better bring it along. I was never quite satisfied with that bonnet, but I suppose—"

"What else " interrupted the man.

"There's a black fan which cost me 90 cents. I got it at a sale, and everybody says it was a bargain. My sister Emily was with me the day I bought it, and she could swear to it if necessary. She advised me to get a white fan, but I prefer—"

"I don't care about the particulars, ma'am."

"Oh! you don't? Well, there'a a black shawl in there that used to belong to my Aunt Eunice. She had it for ten years before she died, and then it fell to my mother. Let's see. The shawl must have been in our family for—for—"

"Go on, ma'am."

"Then there's my black silk dress. I paid $1.50 a yard for it in Buffalo, but I got cheated. I hadn't worn it but twice when the silk cracked and creased all up. I went back and told the clerk about it, but he wouldn't do anything about it. Next time I buy a silk dress I propose—"

"Never mind about the dress."

"The waist was beaded."

"I don't care about that."

"Well let's see. Oh, yes; on the bottom of the trunk are four sheets I was bringing to my sister. I made and bleached 'em myself. She's got four boys, and the way they do kick the sheets out is something awful. I don't suppose I could have brought anything else she would—"

"What else?"

"There's a pair of gray pants on top the sheets—an old pair belonging to my husband. They are worn a litle thin on the knees, but they will do to cut over for one of the boys. I've brought up three boys myself, and I know how awful they are on pants. Sometimes it wouldn't be four weeks before—"

"You can have the trunk," bluntly replied the baggageman.

"But there's a lot more things to mention yet. There's three pairs of new—"

"Take it away!"

"And I forgot to tell you that there are—"

"If you want your trunk, here it is!"

"Well, I'll have a man take it away. I lost my check and I wanted to satisfy you it was my trunk. If you'd give me time I'd tell you about the coat with a fur collar, and the two pairs of suspenders for the boys, and—"

The baggagemaster walked off, and after waiting around two or three minutes with a disappointed and dejected look she sorrowfully told the expressman to carry the trunk to his wagon.

TAKE CARE OF YOUR EYES.

An eminent occulist says that if people would keep free from nervous prostration they must have respect for their organs of sight as he thinks constant eye strain is one cause of this prevalent malady and he says that we should pay 'especial attention to making the eyes relax on every possible occasion when they are not in actual use. It has been said that fancy work was an invention of the evil one to tempt industrious wome to work beyond their capacity, and instead of resting her eyes when she has the opportunity she harnesses them up for close work. The overworked nerves back of the eyes react on the other nerves of the body and cause the nervous break-down and the doctor's bill which is sent for services to her at the end of the year would pay ten times over for those pieces of fancy work and she would have been saved weeks of distressing illness.

The eyes should never be used when they are tired or weak from illness, and the light should always fall on the work or book from over the left shoulder. A good way to strengthen the eyes if they are inclined to be weak is to bathe them every morning while washing the face, then take a towel, one end in each hand and draw it across the back of the neck for a few minutes, as this relieves congestion and stimulates the blood and nerve vessels to renewed activity.

An excellent solution for bathing weak eyes is made by dissolving a little boric powder in warm water, but if the eyes are sore or inflamed a little spirits of camphor should be added. To prepare this solution, put one teaspoonful of the boric powder in a teacup and a few drops of camphor and rub to a smooth paste, then fill the cup with boiled water. strain and bottle and when bathing the eyes, use an old soft linen cloth. A weak boric solution is fine for the eyes of young children and the boric water is all that is needed when the eyes are sore or inflamed, and if this is used at least once a day, the eyes will be greatly strengthened.—A. H.

AN IRISH RACE.

Two Irishmen were about to run a race to a certain tree by different routes. Suddenly Mike slapped Pat on the back and asked how they were to tell who reached the destination first. After a moment's thought Pat answered:

"I tell yer, Mike, if I get there first I'll make a mark on that tree with this chalk, and if you get there first you can rub it out."—Judge.

A HOSPITALITY HINT.

When I expect a guest from a distance, I purchase a number of souve nir post-cards of our home town and after stamping them place them on the desk in the guest-room where they can be addressed and sent back without any shopping being done by my guest.—From Woman's Home Com panion.

TWO WAYS OF LOOKING AT IT.

"Johnny," said his mother, "isn't i rather extravagant to eat both butte and jam on your bread at the sam time?"

"No, mother, I think it's econom cal," answered Johnny, "for the sam piece of bread does for both."

Just Six Minutes to Wash a Tubful!

This is the grandest Washer the world has ever known. So easy to run that it's almost fun to work it. Makes clothes spotlessly clean in double-quick time. Six minutes finishes a tubful.

Any Woman Can Have a 1900 Gravity Washer on 30 Days' Free Trial

Don't send money. If you are responsible, you can try it first. Let us pay the freight. See the wonders it performs. Thousands being used. Every user delighted. They write us bushels of letters telling how it saves work and worry. Sold on little payments. Write for fascinating Free Book today. All correspondence should be addressed to **1900 Washer Co., 725 Henry St., Binghamton, N. Y.** If you live in Canada, address Canadian 1900 Washer Co., 355 Yonge St., Toronto, Canada.

BRANCH HOUSES: We maintain branches at all principal cities. We also make shipments from our warehouses in Kansas City, San Francisco and Brigham City, Utah.

HOMELESS CHILDREN

Want fathers and mothers. Cultivator readers have taken hundreds of them, and they tell us of mutual happiness and satisfaction.

No home is complete without a child in the house.

Favorable arrangement can be made.

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Sold for cash or easy payments. 30 days Free Trial. Freight paid. 6000 sold in California.

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Common Sense in Canning for Market

Is the name of a

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hat we are going to publish. It tells
iow to "put up" every kind of fruit
r vegetable, in cans or glass jars.

- **How to can oranges.**
- **How to bottle fruit juices of all kinds.**
- **Why so many unfermented grape juices are insipid.**
- **How to make it equal to best.**
- **Why canned goods spoil after canning.**
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- **Canned Eggs have been kept fresh, hermetically sealed, for months. Why not now?**
- **And much other valuable information.**

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THE LARGEST ASSOCIATION IN CALIFORNIA

Assets, Jan. 1, 1910, - $2,485,188

Send for 20th Annual Statement and Booklet

THE QUARREL.

Now, Willie Johnson, yesterday,
He makes a face at me, an' say
He's glad he ain't a little girl,
'Cause he don't have no hair to curl
An' his face don't have to be clean—
An' so I tell him 'at he's mean,
An' I make faces at him, too,
An' stick my tongue out! Yes, I do!

Nen me an' Willie Johnson fight.
I know 'at girls must be po-lite
An' never get in fights—but he
Got in the fight; it wasn't me.
An' so I tored off Willie's hat
An' give him just a little pat
Up 'side his face, an' he just cry
An' run home like he's 'fraid he'll die!

So pretty soon his mama, she
Comed to our house—an' looked at me!—
Nen goed right in where mama is—
She tooked 'at tored-up hat o' his,
An' Missus Johnson she just told
My mama lots o' things, an' scold
About me, too—'cause I'm outside
An' hear—th' door is open wide.

Nen Willie comed out wif his pup
An' say "Hullo!" So we maked up
Nen go to playin' an'mal show—
His pup is a wild li'n, an' so,
W'y, he's a-trainin' it, an' I'm
Th' aujence mos' near all th' time.

An' nen our mamas bofe comed out.
His mama she still scold about
Me slappin' him—an' they bofe say:
"Hereafter keep your child away!"

An" nen they see us playin' there
An' they bofe say :"Well, I declare!"
—Wilbur D. Nesbit, in Harper's Magazine.

PICKLES.

Sweet Cucumber Pickles.

Cut ripe cucumbers in halves, paring them, scrape out all the seeds, cut into strips and soak overnight in salt water. To every quart of vinegar add one pound of sugar, boil and skim, then boil the cucumbers in the vinegar until tender and transparent. Take out the pickles, strain the vinegar, return to the fire with a small bag of mixed spices, boil two hours, pour over the pickles, cover, and set away in a cool place.

Watermelon-Rind Pickles.

To each quart of best vinegar add three pounds of best brown sugar. Bruise four ounces of stick-cinnamon and two ounces of cloves, put into a muslin bag and boil with the vinegar for five minutes, then pour over the rinds, previously pared and all the inner pink portion cut away, and let stand twenty-four hours. Strain off the liquid and after heating it again pour over the rind, letting remain twenty-four hours, after which boil all together for a short time.

Chili Sauce.

One peck of tomatoes, three cups each of peppers and sugar, two cups of onions, one cup of salt, three pints of vinegar, three teaspoonfuls each of cloves and cinnamon, two teaspoonfuls each of nutmeg and ginger. Chop tomatoes, peppers and onions fine and let stand in salt water overnight, then drain. Boil all together three hours, taking care not to scorch.

SOME GOOD RECIPES.

Cream of Spinach Soup.

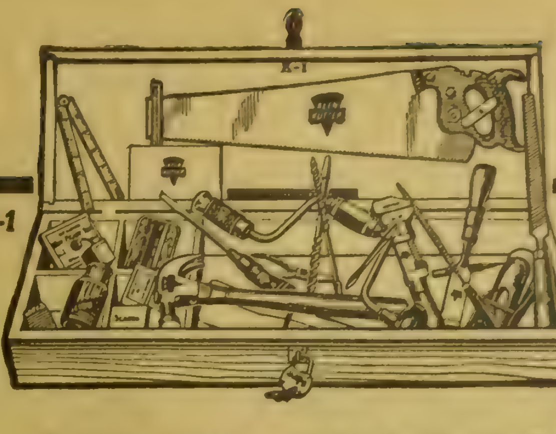
Boil one quart of spinach and strain it through a colander. Melt one tablespoonful of butter and stir in one tablespoonful of flour until smooth; then add one quart of milk, a pinch of salt, and the strained spinach, and boil about a minute.

Potatoes Roasted in Pan with Beef.

Peel the potatoes and boil them until half-cooked. Then pour off the water and put the potatoes in the roasting-pan with the beef. Baste them often with the beef gravy and serve them on the platter with the beef.

Corn Pudding.

To one canful of corn add a cupful of milk, half a teaspoonful of butter, and pepper and salt to taste. Boil it until tender, and then allow it to cool. Beat thoroughly two eggs, and, when the corn is cool, stir them into it, and pour the whole into the bowl in which it is to be served. Bake for twenty minutes.—Harper's Bazar.



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Every tool has a place of its own and it's there for service. Whatever the tool—however hard the work—you won't be disappointed.

Keen Kutter Tool Cabinets are made in many different sizes, the prices varying with the number and kinds of tools selected. There's the $8.50 size containing enough tools for any ordinary job, several between this and $50.00 and one at $125.00, which includes work-bench, vises, etc.

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These are not shopworn cars, they have never been driven a mile, and are the latest models received.

We have sold the lease of our garage and have not at present the necessary equipment and room at our store to properly handle automobiles, so we offer you the opportunity to buy a car of higher grade than you ever thought of owning and at a price no higher than is charged for a medium grade car.

Call at Newell Mathews Company, 200 North Los Angeles Street, Los Angeles, Cal., or write us, stating whether you wish to buy a one-seat or two-seat car and we will send you full information or have our salesman call.

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Catalogue FREE. Famous Recipe Book, "The Enterprising Housekeeper," for 4 cents in stamps.

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Manufacturers of ***The Best Tents*** on the market. Our Fumigating Tents hold the Gas and our Irrigating Hose hold the Water. Write for Catalogue No. 22.

San Francisco and Los Angeles Produce Markets

Los Angeles Markets

LOS ANGELES, Oct. 19, 1910.

Butter.

Receipts of butter on Tuesday were 61,680, pounds which is a liberal supply, but market remains firm with good demand and a half cent advance on firsts.

Price to trade 2½c in advance of the following Produce Exchange Quotations:

Extras	.35
Firsts	.32½
Cooking	.25

Cheese.

Local	.18
Northern fresh	.18@18½
Oregon Daisy	.18½@19
Imported Swiss	.32
Domestic Swiss	.23@24

Eggs and Poultry.

Heavy demand with light receipts caused an advance of a cent on both locals and case counts. Market very firm.

Paying price f. o. b.. L. A. is:

Local ranch candled	.46
Case count buying price	.42
Eastern fresh	.35
Eastern Storage	.32
Seconds	.27

Dealers pay for live poultry f. o. b. L. A.:

Hens, per lb.	.16@18
Roosters	.10
Spring 1½ to 2 lb.	.17
Turkeys	.24
Ducks	.16
Geese	.11
Squabs, per doz.	1.50

Live Stock.

The following quotations are f. o. b. Los Angeles, on all stock:

Hogs, 175 to 200 lbs.	9.25
Prime Steers	.5
Heifers	.4@4½
Calves, per lb.	.6½
Sheep ewes, per head, shorn	4.00@4.50
Lambs, per head	3.50
Wethers, shorn	4.00@4.50

Potatoes.

Wholesale prices are:

Local Burbanks, ctl	1.25
Highlands	1.10@1.35
Salinas	1.75
Sweets, Yellow, per ctl	1.50@1.75

Onions.

Wholesale quotations:

Australian Browns	1.75
Yellow Danvers	1.50@1.65
Garlic	.7@7½

Vegetables.

Wholesale quotations:

Artichokes, northern, doz	1.00
Beets, sack	.90
Beans, green	.4@5
Beans, Limas	.5
Brussels Sprouts	.8@10
Bell Peppers, lb.	.4@5
Green Chilis	.4@5
Chili's, Dried	.25
Cucumbers, per lug	.40@50
Cabbage, per sack	.75
Celery, crate	2.50@2.75
Cauliflower, crate	1.35@1.50
Carrots, per sack	.90
Egg Plant, per lb.	.4
Green Corn, box	.25@50
Green Onions, per doz. bunches	.20@25
Lettuce, common, per crate	1.10@1.25
Leeks ,per doz.	.35
Okra, lb.	.2@8
Peas, per lb.	.6½
Parsley, per doz. bunches	.25
Parsnips, doz. bunches	.25
Pumpkins, lb	.1@1½
Radishes, per doz. bunches	.15@20
Rhubarb, local	.75@1.10
Peppermint, doz bunches	.30@35
Spinach, per doz.	.20
Hubbard Squash, lb.	.2
Summer Squash	.40@50
Tomatoes, lug	.60
Turnips, sack	.90
Water Cress, doz. bunches	.25@35

Citrus Fruits.

Valencias	4.00
Grapefruit	2.00@3.75
Lemons	4.00@5.00

Fresh Fruits.

Wholesale prices on the market are:

Alligator Pears	3.00@4.00
Apples, Bellflowers	.90@1.15
Spitzenbergs	1.50
Jonathans, Utah	2.25@2.50
Greenings	.85@1.10
Pearmains	.80@1.25
Fall Pippins	1.00
Pineapples	.6@7
Casabas, doz	1.50
Cantaloupes, crate	2.50
Figs, box	1.00@1.10
Grapes, lug	.85@1.15
Grapes Tokays	1.25@1.50
Pears, box	1.75
Bartletts	1.75
Strawberries	.8
Raspberries	.8
Blackberries	.9
Peaches, box	1.00@1.10
Plums, crate	1.75
Quinces, lug	.90@1.00
Watermelons, lb	.1½@2

Dried Fruits.

Wholesale prices are:

Apricots	12@13
Evap. apples, fy., per lb.	.8½
Figs, pound bricks	.8½
Peaches	.8@8½
Pears	.11
Nectarines	.11
Prunes	.6@11
Plums	.11

Beans Dried.

Wholesale quotations:

Limas	5.00
Black eyes	5.50
Pinks	6.25@6.50
Lady Washington	4.50
Small white	4.50
Garvanzas	4.50
Lentils	7.00

Nuts.

Wholesale quotations are:

No. 1 soft shell walnuts	16½@18
No. 1 H. S.	.14
No. 2, all kinds	.11

Grafted or budded an advance of 2½c.

Brazil nuts	.14
Filberts	.14
Almonds, IXL, per lb	.17@17½
Pecans, polished	.18
Peanuts, Eastern	.7@7½

Honey.

Wholesale quotations:

Extracted water white	.9
Extracted light amber	.7½
Comb W. W.	.20
Light amber	.15
Beeswax	.30

Hay.

Buying prices f. o. b. cars L. A. are:

Barley hay	10.00@13.00
Wheat hay	10.00@13.00
Tame oat	12.50@14.00
Alfalfa	10.00@11.00

Grain.

Wholesale selling price f. o. b. Los Angeles:

Wheat, new, per ctl.	1.80@1.85
Corn	1.65
Popcorn	3.50
Kaffir corn	1.75
Egyptian corn	1.85
White oats	1.85
Seed Rye	2.00
Seed Barley	1.30

Feed Stuff

Wholesale selling price f. o. b., Los Angeles:

Cracked Corn	1.70
Cracked Wheat	1.95
Shorts	1.80
Bran	1.55
Oil cake meal	2.50
Feed Meal	1.75
Rolled Barley	1.15

San Francisco Markets

SAN FRANCISCO, Oct. 18, 1910.

Butter.

The week end saw large receipts and light demand and a slight weakness, which took off a half point in quotations. Receipts at this writing continue large with weakness.

The official quotations of the San Francisco Wholesale Dairy Produce Exchange for today are as follows:

California extras, per lb.	.35½
California firsts	.30
California seconds	.29
Storage	.30½

Cheese.

California flats, new	.13@17
Cal. Young Amer. fy. new	.15½@17
Oregon, Fancy	.16½

Eggs and Poultry.

Eggs declined during the last days of last week, and while this week starts with good demand holders are unable to boost the price which is now one cent under last week.

Official quotations of the S. F. Wholesale Dairy and Produce Ex. are:

Fresh ranch extras	.44½
Firsts	.42
Seconds	.30
Storage	.30
Hens, per dozen	5.00@10.00
Roosters, per doz.	5.00@8.50
Fryers, per doz.	5.00@6.00
Ducks	6.00@10.00
Broilers	3.00@4.00
Spring Turkeys	.26@28
Geese	2.00@3.00
Goslings, pr	2.00@3.00
Pigeons	1.50@2.25
Squabs	2.50@3.00

Live Stock.

San Francisco prices gross weight:

Steers	.4@5½
Cows and heifers	.3¼@4½
Hogs	.6@9½
Calves, per lb	.4½@6
Milk Lambs, unshorn	.6@6¼
Wethers No. 1	.4½
Ewes No. 1	.4@4¼

Potatoes.

Wholesale market quotations:

River White, new box	.65@90
Salinas Burbanks	1.45@1.60
Sweets, ctl.	1.90@2.00

Vegetables.

Wholesale quotations:

Artichokes	.25@40
Beans, string, per lb.	.2@3
Beans, Lima, lb.	.4@5
Cucumbers, box	.50@60
Celery, per crate	.90@1.50
Chili Peppers, per box	.40@60
Bell Peppers	.6@7
Green Corn, sk.	.75@1.25
Egg Plant, per box	.25@35
Lettuce, per crate	4.50@5.00
Okra, box	.40@50
Peas, per lb.	.4@6
Summer Squash, box 25 lbs.	.60@75
Tomatoes	.20@40
Garlic	.2½@3

Onions.

Onions, sk.	1.00@1.10

Citrus Fruits.

Valencias	3.00@4.50
Grapefruit	2.00@5.50
Lemons	3.00@6.00
Limes	6.50@7.00

Fresh Fruits.

Apples, box	.50@85
Apples, Gravensteins	1.00@1.25
Apples, Bellflowers	.90@1.00
Bananas, Hawaiian	.75@1.20
Cantaloupes, crate	1.25@1.75
Cantaloupes	1.75@2.25
Nutmegs	.60@1.00
Figs, box single	1.25@1.50
Grapes, seedless	.60@65
Grapes, Muscat	.40@65
Grapes, Tokays	.50@60
Grapes, wine, ton	8.00@15.00
Huckleberries, lb	.6@8
Pears, Winters	.50@85
Bartletts, wrapped	1.25@2.25
Peaches, lugs	1.25@1.50
Persimmons, box	1.00@1.25
Quinces, box	.85@1.00
Pomegranates, box	.50@1.00
Plums, crate	.90@1.15
Raspberries chst	5.00@6.00
Strawberries, chst.	4.00@6.00
Pineapples, doz.	2.00@3.00
Watermelons, per doz.	2.00@3.00

Dried Fruits.

1910 crop, f. o. b., carload lots, per lb: Apples, 7@8¼c; Apricots, 10¾@13¼c; do. Moorparks, 13½@14c; Peaches, 5⅜@7c, with a premium of ⅛@¼c on Muirs; Prunes, Santa Claras, 5@5½c with ½@¾c premium on 40s; outsides, 5¼@5⅜c; Figs, 4¾@6½c for White and 4¼@4½c for Black; Pears, 9¾@13c.

RAISINS—1910 crop: London Layers, in 20-lb. bxs: 6-crown clusters, $2.25@2.50; do, 5-crown, $1.75@2.00; do 4-crown, $1.35@1.40; 3-crown layers, $1.10@1.15; do, 2-crown, $1.00@1.10. Seeded, per pkg.—Fancy, No. 16, 6¼@6½c; Choice, No. 16, 5½@5¾c. Loose Muscatels in 50-lb. bxs—Standard, 4-crown, 4⅛@4¼c; do, 3 crown, 4⅝@4¾; do, 2-crown, 5⅜@5½c. Dried Grapes, 3@3¼c. Seedless—Muscatels, 3½@3¾c; Sultanas, 4½@4¾c; Thompsons, 5⅛@5¼c.

Nuts.

Walnuts, No. 1 soft shell	.15
Walnuts, No. 1 hard shell	.14½
Almonds, '10 N. P. U.	.13@13½
Almonds, '10 Nonp.	.15@15½
Almonds, '10 I X L	.14@14½
Almonds, Peerless	.12
Pecans	.14@15
Chestnuts	.14@15

Beans Dried.

Limas	4.75@4.85
Pink	5.25@5.35
Black eyes	5.35@5.75
Small white	3.80@3.85
Large White	3.80@3.85
Kidneys	5.35@5.50
Garvanzas	3.25
Bayo	5.15@5.25
Horse beans	2.00
Red Mexicans	5.25@5.50
Cranberry	4.50@4.75

Hops

Hops, 1910 crop	.12@16
Hops, 1909 crop	.10@15

Honey.

W. W. Comb '10	.15
Dark Comb	.12½
Extracted W. W.	.8
Extracted, dark	.6½
Beeswax, per lb.	.24@30

Hay.

Fancy wheat	12.50@13.50
No. 1 wheat or wh and o	10.50@11.50
No. 2 wheat or wh and o.	9.00@10.00
Choice tame oat	10.50@11.50
Other tame oat	8.00@9.50
Wild oat	8.00@9.00
Stock hay	5.50@6.50
Alfalfa	9.00@12.00
Straw	.40@50

Grain.

Wheat, No. 1.	1.50@1.55
Barley, good to choice	.95@97½
Barley, fancy	.98¾@1.00
Barley, poor to fair	.90@92½
Oats, white	1.47½@1.57½
Rye, new crop	1.50@1.60
Corn, large yellow	1.55@1.60
Alfalfa seed	.14@15
Mustard brown	.4½
Millet	.2½
Flaxseed	.5@5½
Broom corn seed, per ton	23.50

Feed Stuff.

Bran, per ton	29.00@31.00
Feed cornmeal, per ton	36.00@37.00
Cracked corn	36.00@37.00
Ground barley, per ton	22.00@23.00
Rolled oats, per ton	29.00@31.00
Middlings	34.00@36.00
Oil cake, per ton	40.00@41.50
Cocoanut cake per ton	25.00
Mixed feed, per ton	24.00@27.00
Shorts	30.00@32.00

Deciduous Market

Sacramento, October 15, 1910.

The following circular of the California Fruit Distributors gives number of cars of deciduous fruit shipped from all points in California for the week (7 days) ending Friday morning, October 14th, 1910:

Pears:

9 cars; Winter pears will continu to go forward in small volume next week when shipment is expected to close.

Grapes:

386 cars; Grape shipments for the week show a falling off of over 7 cars and for the coming week the decline will probably be considerably larger. There are not a large number of Tokays left in the state, but the supply of Cornichons and Emperors will be ample for some time to come, as not many have been shipped up to the present time.

Weather conditions during the past week have been unfavorable. Light rains fell during the early part of the week and it was expected that this would make a material difference in shipments. However, the rainfall was light and was followed by favorable weather, so that the Tokay movement has begun again. Should there be no further storms it is possible that a considerable number of cars of this variety will yet go forward. At this time in the year, however, the weather is always uncertain and heavy rains at any time may practically stop the movement.

Citrus Market

LOS ANGELES, Oct. 19, 1910.

There are about 250 cars of Valencias yet to go and from present indications all will be forwarded before Novembe 1st. Many of the shipments now being made are of very small fruit. Some full cars have been sent, every box o which were small off-sizes. This accounts for some low quotations give in the auction reports following. The general tone of the market is, however very strong, and good fruit of regula sizes is met with a very firm market.

The Florida new crop is already beginning and for early fruit is of good quality. Of course it goes without saying that fruit at this time will be green and will not interfere with the Valencia market. The earlier Navel shipments may be confronted with large shipments of this early fruit.

The lemon market is exceptionall strong and insufficient fruit is being cut to meet the demands.

Shipments.

Shipments of citrus fruit to date since November 1st, 1909: 29,817 car of which 25,173 were oranges and 464 lemons. To same date last year 37,685 cars of which 31,591 wer oranges and 6094 lemons.

NEW YORK, Oct. 18.—Six cars sol Market firm on good fruit. Weathe clear and fair.

CHICAGO, Monday Oct. 17.—Lemon firm; offerings limited and there is fair trade. Boxes, California choice $5.75@6.00; extra choice, $6.25@6.50 common, $4.50@5.00.

Oranges sell slowly and are in ligh supply. Boxes, late Valencias extr choice, $4.25@4.50; choice, $3.25@3.75 grapefruit, Florida crates, $3.50.

CINCINNATI, Monday Oct. 17.—Warm. Market steady. Two car Valencias one car lemons and one ca Florida oranges sold. Florida Bright sold from $1.90 to $2.40.

VALENCIAS—	Avg
Pet. SA Ex	$3.0
El Captain	2.9
Clover, Xc, Redlands OG Assn.	2.6

LEMONS—	Avg
Loma, Limoneira Co	$6.1
Bridal Veil	6.0
T Cross	5.8

PHILADELPHIA, Monday Oct. 17.—One car Valencias sold.

VALENCIAS—Blue Banner, Pionee F Co., $3.95; Pride of West, $3.00.

BOSTON, Monday Oct. 17.—Thre cars sold. Favorable. Market stead

VALENCIAS—	Avge.
Butterfly, Covina Ex	$4.95
Robusta, AH Pachappa	4.60
Orchard, Or, National O Co	5.45
Teal, Covina Ex	4.30
Hobo, AH Pachappa	3.60
Standard, National O Co	4.45

ST. LOUIS, Monday Oct. 17,—Favorable. Market firm on good fruit. One car lemons sold.

LEMONS—Coyote, OK Ex, $5.80; Blue Jay, $4.60.

NEW YORK, Monday Oct. 17.—Offerings today comprised nine cars of Valencias. The market opened very strong and active and prices held an upward trend until the close. The market is now depending almost entirely on California for the supply of oranges and the possibility of prices under present conditions are almost unlimited. The outlook is certainly very favorable and every indication seems to point to still higher prices.

A small offering of 400 boxes of Jamaica oranges put through the auction today was eagerly taken at prices ranging $3.20 to $3.90 for fancy with choice $3.15 to $3.30—averaging $3.78 and $3.21 respectively. The sale of this fruit at the above prices readily reveals the fact that oranges are wanted and wanted badly.

An offering of 25 barrels of Almeria grapes sold today at auction. The condition of the fruit was generally poor with much wasty stock and rain damaged fruit in evidence. The market cannot be quoted as lowering to the condition. Best fruit sold $3 to $4 per barrel, with others selling down according to condition. Very little fruit is arriving that is fit for storage.

A considerable quantity of grapsfruit from various sections was sold today. The total amount was 3700 boxes. The fruit as a rule was rather ordinary, which coupled with the liberal supply produced a market that was inclined to be weak. Florida ranged $2.25 @ $4.75. Porto Rico, $1.95@3.50. Jamaica, 2.00@3.00, and Cuban, $2.25@3.50. The Cuban stock was best. The weather today was clear and cool.

VALENCIAS—	Avge.
Tustin Gem, Tustin P Co	$5.75
Honest Pack, Xc, Tustin P Co	3.65
Old Oak, Ch, Tustin P Co	4.20
Old Mission, Fy, Chapman	8.10
Old Mission, Ch. Chapman	7.35
Golden Eagle, Sd, Chapman	5.80
Mars, Ch, E Peycke Co	4.70
Cove, Fy Or, E Peycke Co	3.65
Premium, Or, Benchley F Co	6.65
Superior, Ch, Benchley F Co	5.40
Sceptre, SS Ex	7.25
Planet, SS Ex	5.90
Butterfly, Covina Ex	4.80
Stag, ACG Ex	5.95
Pointer, ACG Ex	3.45
Hunter, ACG Ex	3.90
Red C, Covina Ex	4.30
Cougar, Covina Ex	3.35
Pointer, ACG Ex	3.95
Hunter, ACG Ex	3.30
Signal, Xf, Stewart F Co	7.85
Mayflower, Stewart F Co	6.55
Pilgrim, Stewart F Co	5.75
Buena, Stewart Co	4.90
Sumclass, Stewart F Co	4.50

NEW YORK, Tuesday, Oct. 18.—The offering today comprised six cars of Valencias. Taken altogether, the market can be safely quoted as firm, although some comparative prices appeared to be slightly lower, but this was due more to the quality of the fruit than a weakening of values.

A fair sized offering of Porto Rican oranges, consisting of 1200 boxes, was put through the auction and was eagerly absorbed by the trade at excellent prices. Prices ranged $1.80 to $3.30, with fancy stock averaging $2.84 and $2.89, and choice fruit $2.30, $2.38 and $2.43. The fruit was of fairly good color and cut well for this season of the year.

Grapefruit, with the exception of some fancy Porto Rican and Florida stock, sold low and met with a poor reception from buyers, who already have sufficient to fill all immediate orders. A small quantity of Porto Ricans sold at $3.50 to $5.75, with the bulk at $1.87½@3.50; fancy Floridas, $3.50@ .62½; bulk, 2.37½@3.62½; Nassau grapefruit, $1.75@2.00. The weather today was fair.

VALENCIAS—	Avge.
Ch. E. Peycke Co.	$5.00
Cove Fy. Or. Co.	3.40
Titus Ranch Fy. San Marino GPA.	5.35
El Toreador Sd San Marino GPA.	3.75
Victoria AH Ex	4.75
Squirrel AH Ex	4.65
Navajo AH Ex	4.00
Butterfly Covina Ex	5.35
Teal Covina Ex	3.95
Golden Cross	5.40
Pointer ACG Ex	4.20
Hunter ACG Ex	3.15

CHICAGO, Tuesday, Oct. 18.—Lemons, firm. Offerings remain light. Boxes California choice, $5.75@6.00; extra choice, ..6.25@6.50; common, $4.50@ .00.

Oranges rule quiet. The offerings and demand are both moderate. Boxes late Valencias, extra choice, $4.25@ .50; choice, $3.25@3.75; grapefruit, Florida, crates, depending on size and color, $3.00@3.50.

BOSTON, Tuesday, Oct. 18.—One car sold. Clear and warm. Market unchanged.

VALENCIAS—	Avge.
Champion AC Denman Sons Fy	$3.90
Champion Cr. AC Denman Sons	3.75
SEEDLESS GRAPEFRUIT—	**Avge.**
Champion Fy AC Denman Sons	$3.15
Champion Ch, AC Denman Sons	2.70
SEEDLING GRAPEFRUIT—	**Avge.**
Champion Fy AC Denman Sons	$3.25
Champion Ch. AC Denman Sons	3.65

THE ALMOND SITUATION.

SACRAMENTO, Oct. 17, 1910.

The California Almond Growers' Exchange writes:

To date we have shipped out 20 cars and have orders for 15 more to go within the next two weeks. These have been moving at satisfactory prices and as seven cars have been sold in the last three days you can radily understand that as our holdings have been already reduced to about 53 cars unsold, and that two or three weeks of active demand now for the holiday season, which is ahead of us, may wipe out the entire supply.

Several of the associations have finished delivering and have everything in the warehouses. Most of the others are nearing the end and we think shortly we will have everything under cover in the warehouses and in a position where we can load out cars promptly.

Those who have bitter and hardshell almonds will please put them in shape for market and deliver them at the association warehouse as soon as possible.

PATAGONIA STRAWBERRY.

Fifty years ago the only strawberries on the market were the tiny wild ones to be had but a few weeks in the summer. But they were well worth waiting for. Was there ever anything more delicious than the first strawberry shortcake. But our nurserymen and plant specialists have been at work on this most popular of the berries until now in California we can have them fresh practically any day in the year, great luscious fruits that bear little resemblance to their wild progenitors save in the appeal to the palate. The latest word in strawberry perfection has been spoken by Luther Burbank and to show for it he exhibits his "Patagonia Strawberry," said to combine the desirable qualities of other varieties and to surpass them all in prolific fruiting. This is a handsome fruit, conical in shape, of superb coloring, fine texture and a delicious flavor suggestive of pineapple. The vines are thrifty growers and prolific bearers, under intensive culture bearing freely a gallon of fruit to the plant. A striking characteristic is that the fruit is borne off from the ground, thus insuring cleanliness and perfect ripening. Both commercially and from a culinary standpoint the Patagonia strawberry has everything in its favor. The commercial berry planter who first grows it in a given locality is sure to command the trade, for its superb qualities place it in the front rank among particular customers. Plant growers and strawberry specialists who may be interested in this new fruit, can learn more about it by addressing the introducer, Mr. Luther Burbank, at Santa Rosa, California.

POULTRY SHOW DATES.

Seattle, Wash., Dec. 5-10, 1910. F. E. Barth, Secretary.

Portland, Oregon, Dec. 5-10, 1910. J. C. Murray, Secretary; M. W. Coates and Harry H. Collier, Judges.

Petaluma, Cal., Dec. 8-11, 1910. Fourth Annual Poultry Show of the Petaluma Poultry Association. H. R. Campbell, Secretary, Petaluma.

Santa Barbara, Cal., Dec. 18-19, 1910. The annual show of the Santa Barbara Poultry and Pet Stock Association. W. E. Lingard, Secretary, R. F. D. No. 2, Santa Barbara, Cal.

Ashcroft, B. C., Dec. 23-31, 1910. W. Maxwell, Secretary; H. H. Collier, Judge.

Tacoma, Wash, January 3-11, 1911. Frank L. White, Secretary, South Tacoma; Miller Purvis, Judge.

San Diego, Jan. 4-5-6-7, 1911. San Diego Pigeon and Pet Stock Club. A P. A. rules. W. C. McDougal, Secre

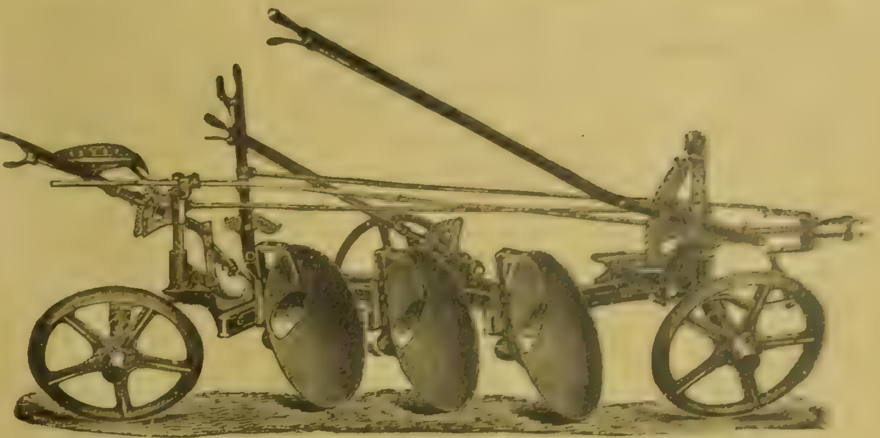
Los Angeles, Cal., Jan. 5-11, 1911 Annual of The Poultry Breeders Association of Southern California at Chutes Park. A. H. Memler, Secretary, San Gabriel.

Colfax, Wash., Jan. 10-14, 1911. H. Rosenkranz, Secretary. H. H. Collier, Judge.

Walla Walla, Wash., Jan. 17-21, 1911 H. Dickinson, Secretary; H. H. Collier, Judge.

Jerome, Idaho, January 24-28, 1911. Wm. N. Hardwick, Secretary.

Disc Plows Disc Plows



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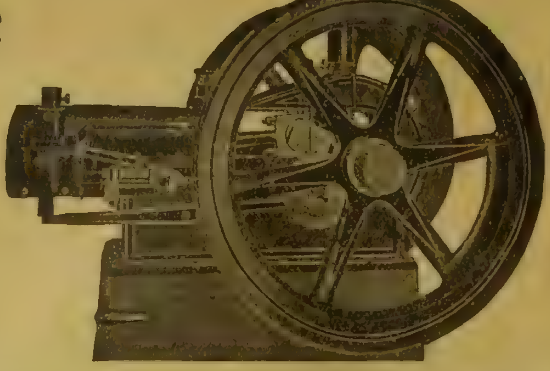

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No.	Thickness	36-Inch Wide Covering	Square Feet in Roll	Price, Per Roll
9B100	½-ply	100 square feet	108	$1.10
9B102	1-ply	100 square feet	108	1.35
9B104	2-ply	100 square feet	108	1.65
9B106	3-ply	100 square feet	108	2.25
9B108	4-ply	100 square feet	108	2.75

Above prices include headed galvanized nails, cement, etc.

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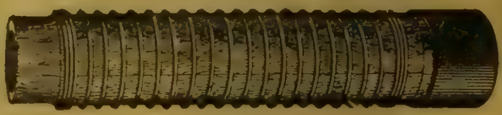

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Machine Banded Pipe, 2 in. to 24 in. Made up ready to lay. Continuous Stave Pipe 12 in. to 12 ft. shipped knocked down. Qnality of material unaffected by change of firm name. We can fill your orders better than ever. New pipe catalog in preparation. Place your name on our mailing list and receive valuable information free. Send for tank catalog.

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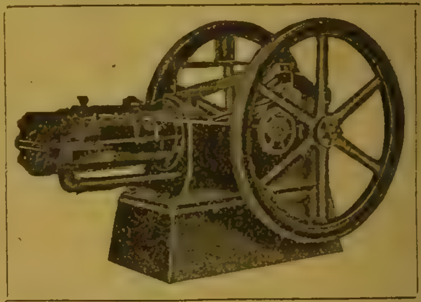

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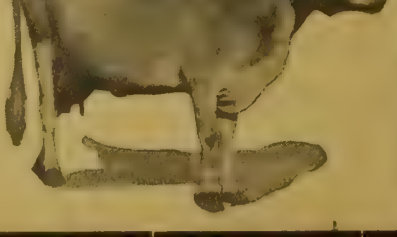
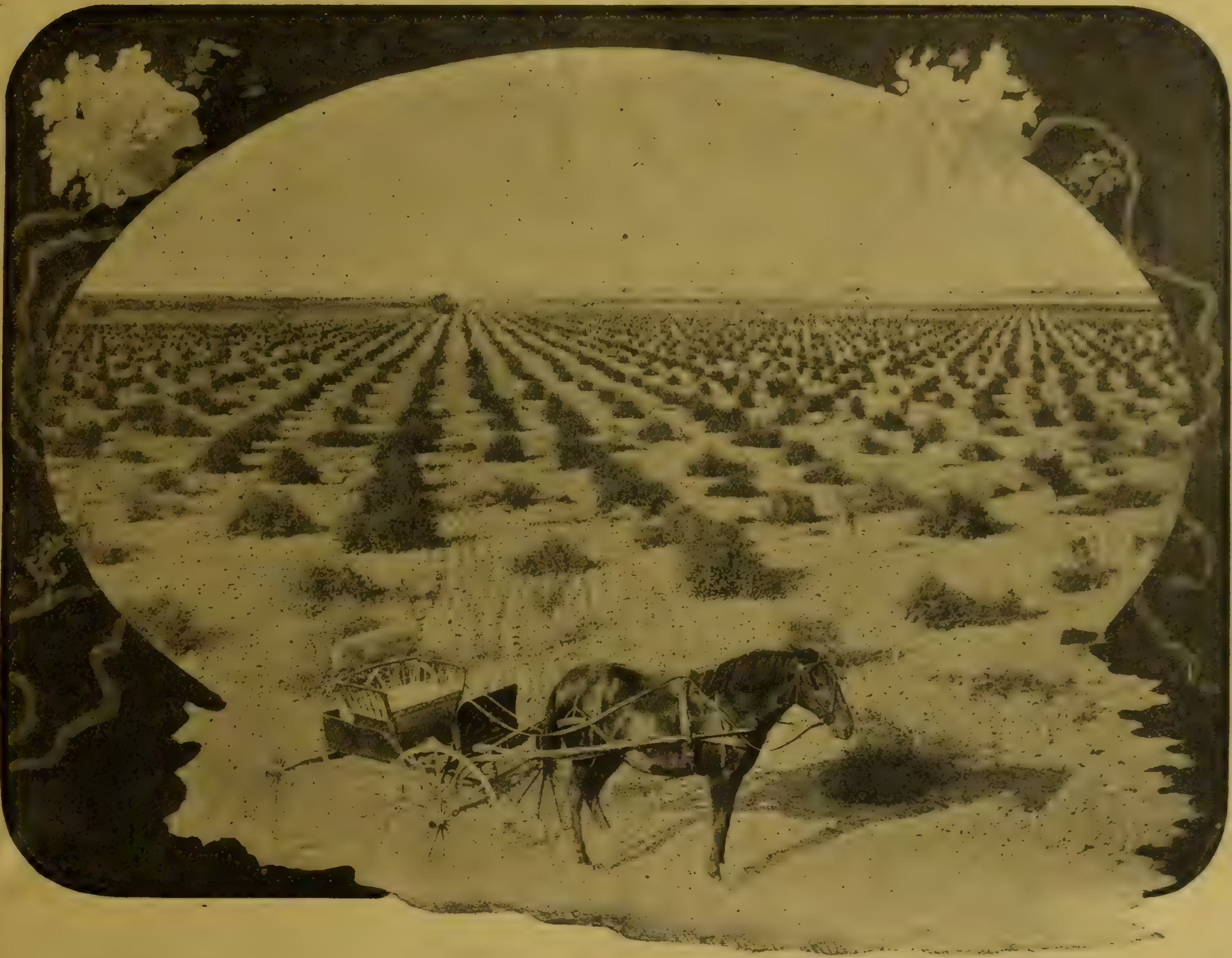


Stack

California Cultivator

An Illustrated Weekly Magazine, Devoted to the Rural Home and Ranch. One Dollar per Year.

Los Angeles October 27, 1910 San Francisco



The Midwinter Tomato in California

Midwinter commercial tomato culture has of late grown to be an industry of importance in the thermal or regions free from biting frosts in California. It gains its importance from the fact that conditions of soil and climate make possible its commercial culture during the winter months when the Eastern markets are ready to take large quantities of fresh garden vegetables. Areas adapted especially to the tomato in Southern California are the Whittier region in Los Angeles and Orange counties, the Cahuenga, Eagle Rock and portions of the San Gabriel valleys. The annual winter shipments to Eastern markets are increasing as the industry is being developed. The usual practice is to sow the early varieties along about the middle of August in shady situations. Be sure to keep the little seedling plants in a thrifty condition; transplant about the 15th of September in rows five feet apart and an equal distance apart in the rows; keep them well watered and hoed. The late or summer fruiting crop is usually sown about the first of the year in frames or pot beds to insure protection from frost; plant out and cultivate after frost danger is past and cultivate as for winter crop.

The more prominent sorts recognized commercially are as follows:

Sparks' Earliana. An early, smooth, bright red tomato of good size. It has been developed in the light warm soil of southern New Jersey, where every effort is made to market tomatoes at the earliest possible date; fleshy, solid, and excellent for shipping purposes.

Chalks Early Jewel. A large, smooth, fine flavored, extra early sort. Indeed, it is so hardy and vigorous in growth that early planting can be made in the open ground. The tomatoes come in good-sized clusters and are uniform in size and shape. The fruits are deep through from stem to blossom end; the solid flesh is entirely free from hard core, streaks, or blemish. The ripe tomatoes are of a scarlet color.

Stone. Fruit large and deep; bright scarlet; smooth, ripening evenly to the stem without a crack; exceedingly solid and firm-fleshed, of the finest quality; one of the best for canneries.

Ponderosa. This is one of the largest varieties; although somewhat irregular in shape; quite a favorite in northern portions of the state for canning.

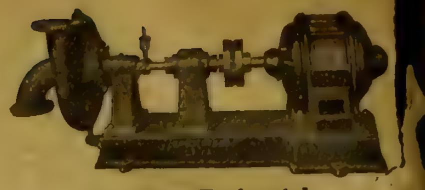
Dwarf Champion. An early and distinct variety, medium in size, plant of dwarf and compact growth; popular in the warmer interior regions.

Early Richmond. A favorite winter variety with Los Angeles gardeners in frostless districts.

New Type Vertical Pump

Does It Not Seem Reasonable

To Assume That a Company



New Type Horizontal

which has been manufacturing one line of goods for over thirty years must be in a better position to furnish superior goods than one which has been in business a few months or years? The old concern has experienced engineers, superior shop facilities and, above all, a reputation and standing to maintain.

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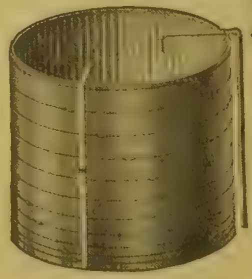

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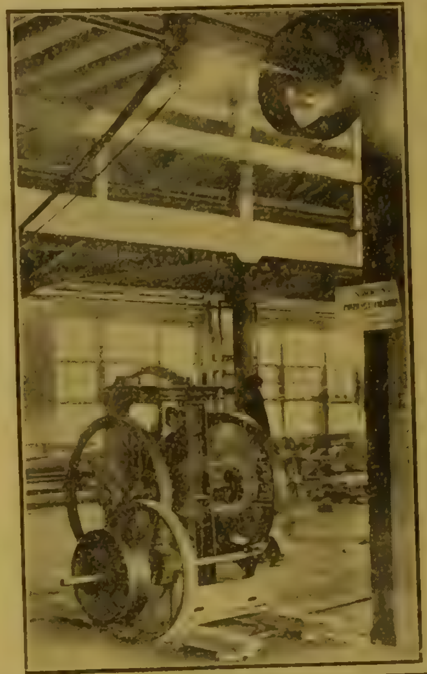
Best For Deep Well and Irrigation Works



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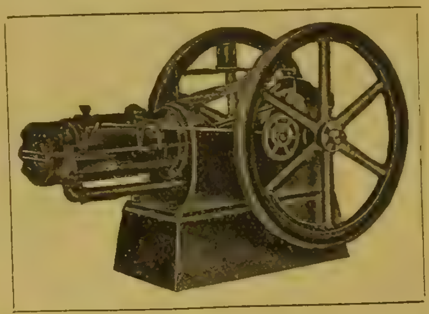

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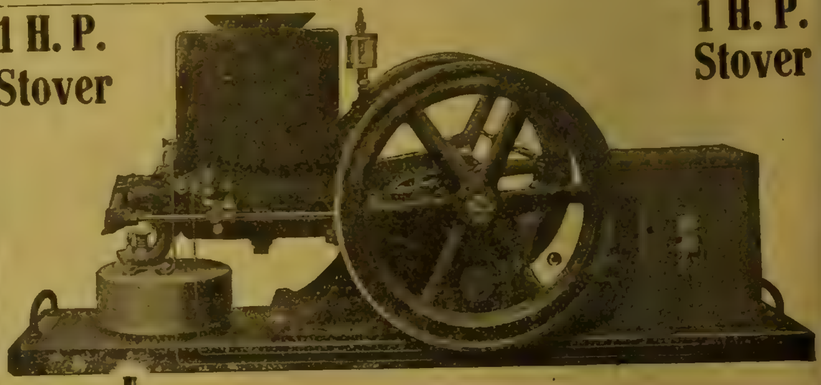

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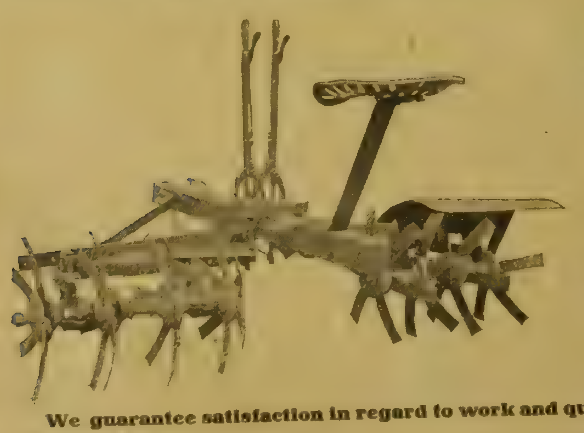

The principle of Rotary Cultivation, is an entirely new one; the action of the teeth in the soil being different from solid, cut away Discs or ordinary Cultivators. It carries absolutely no soil with it and can be used at a greater depth with less draft than any other cultivator on the market today. The tool, works so close to the ground with no wheels or other attachments to catch limbs or tear off fruit, that it can be used to cultivate under the trees, where ordinary tools do not reach. The manner in which the teeth enter the soil, tends to keep them sharp and one set usually lasts a season.

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California Cultivator

Vol. XXXV—No. 17 Los Angeles, California, Thursday, October 27, 1910 Subscription $1 a Year

An Instructive Farmers Week at the University Farm

Formerly Called a State Farmers Institute, the Farmers Week Program Proves Equally as Attractive.—This Year's Attendance Good.—Improvements at Farm.

The farmers of the Sacramento Val[illegible] and the northern end of the San [illegible]quin Valley should show greater [illegible]preciation of the opportunities of[illegible]ed them by the most excellent six [illegible]ys program which is an annual feature at the University Farm at Davis. This program is arranged for the so-called Farmers Week, occurring about the middle of the short courses held every fall soon after the beginning of the regular agricultural high school course. The students of the three-year high school course attend some of these lectures as a part of their regular school work. It is most interesting to watch these young fellows taking notes, and we believe it is safe to say that amongst the interested spectators they show the most perfect attention. Farmers Week is supposed to be for the benefit of the farmer who is unable to take even the short courses but simply goes for an annual brushing up and inspiration to more intelligent effort in his farm work. The attendance was this year rather better than in the past and the accommodations at the Farm are improving so that one may now attend with less discomfort than in former years. The dormitory has a capacity of only sixty, but hopes are expressed that before another year larger quarters will be completed. There are now between 60 and 70 regular students in the school, but the young fellows doubled up so that accommodations were made for many of those attending.

This dormitory, by the way, is worthy of a word in passing. The matron, Miss Katherine Winans, formerly of Los Angeles, is making it as far as possible an ideal home for the boys. We say "as far as possible," for of course no such wholesale family can have quite the comforts of home. The charges for the rooms run from four to six dollars per month. This does not include linens though it does include their laundering. Across from the dormitory is the new dining hall only recently completed. Satisfactory meals were supplied not only to the students but to all attending the Farmers Week. The students are charged at the rate of eighteen dollars per month for table board.

Improvements.

A look over the farm develops the fact that there are several new buildings since the last year's Farmers Week. The horticultural building at that time under construction is now completed and Room Six furnishes a most comfortable meeting place. The stock pavilion accommodates a much larger audience but the drafts of air passing through it at times make it very uncomfortable. If such meetings are to be continued and the audiences are as large as they should be considering the value of the programs, a larger auditorium should be provided. Another new building, attractive in appearance and of value from an educational standpoint, is the veterinary building. It is scarcely completed but already some of the appliances are installed and form the beginning of very complete veterinary work. A large new horse barn and another almost as large for the sheep are other additions to the stock features of the farm. This latter is complete, as is the dairy barn which was finished more than a year ago. Another new feature which is just being completed, in fact, the painters were only beginning their work during the institute week, is the poultry colony consisting of incubator house, seed house and brooders. The regular high school students are expected to take care of the incubators and keep records of fluctuations in temperature and conditions of moisture, and in every way handle incubators and brooders as if they were engaged in the poultry industry for themselves.

One more need for the farm is an administration building. The officers are yet housed in the dairy building. This is not convenient and does not permit of as effective work as if there was a building especially constructed for that purpose.

Exhibits.

A more complete line of exhibits was made this year than at any previous Farmers Week program. Almond hullers, hay derricks, gang plows, equalizers for three or more horses, harrows, cultivators, and other farm implements were exhibited west of the horticultural building.

The Program.

The embarrassment of attempting to give a six-days progrem, each day consisting of three sessions—in fact two programs were often given in two rooms at the same time—is such that it will not be attempted at all. Hence we can only refer in the most general way to the entire week. We may say that the program was so varied that almost every department of agriculture received its just recognition. The program of each day began at eight o'clock with lectures by Prof. Hopper on some feature of dairy or creamery experience. This meeting usually adjourned at nine o'clock when the day's program was continued in Room Six of the horticultural building. The first feature of the afternoon session was usually also a dairy topic considered in the dairy building.

The force giving lectures along dairy and live stock lines consisted, in addition to Prof. Hopper, of Prof. E. W. Major, Dr. Chas. Keane, State Veterinarian, Prof. Haring, Howard Phillips, J. S. Thompson, and Dr. Geo. S. Baker, Inspector of the Bureau of Animal Industry at San Francisco. The lecturers along horticultural lines were Prof. E. J. Wickson, Prof. F. T. Bioletti, Viticulturist, Prof. W. T. Clarke, Judge Peter J. Shields, Prof. I. P. Roberts, Prof. G. W. Shaw, Prof. F. H. King, Prof. C. B. Lipman and I. C. Bridwell. Prof. P. A. Etchervery gave a series of interesting lectures on concrete in irrigation structures and other irrigation topics.

The greatest interest in any one program was probably manifested in the Thursday country life conference. This was in charge of W. A. Beard of Sacramento. The two main problems discussed in that conference were labor to meet California conditions, and education. After discussing the question of education and the need for encouraging more effective conducting of rural schools, the following resolutions presented by a committee headed by E. T. Pettit, Master of the State Grange and O. A. Stebbins, Secretary, were unanimously adopted:

Resolved, by the California Conference on Country Life, held at the University Farm, Davis, October 13, 1910, at the call of the Agricultural College of the University of California, that, after a careful consideration of the full discussion of the day, we believe there should be undertaken a distinct effort to develop the full possibilities of country living in this state. The most important point to be considered concerns the improvement of the public schools, especially those in rural districts, which should be made the subject of state-wide discussion. To attain this end we request the chairman of this Conference to appoint a committee whose duties shall be to canvass the field, and if they deem it desirable, to call a state conference of farmers, educators and others interested in country life, for the consideration of the educational problem.

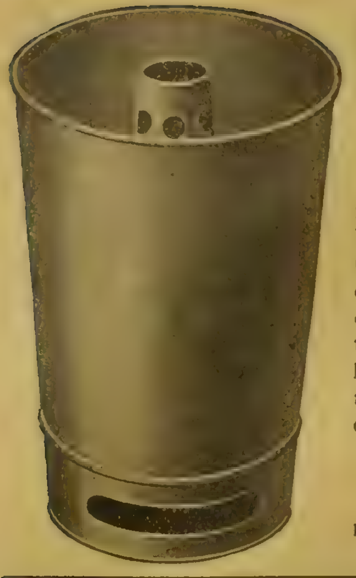
This matter of country life was touched from practically every side. As an instance we may mention one discussion which was on the mission of the country church, by Rev. Arthur Hicks, Field Secretary of the Presbyterian Church. Mr. Hicks took the position that the country communities were over-churched. He spoke of many little communities which could barely support one church, and yet were burdened with three, four or five organizations struggling to maintain existence. He urged that these organizations unite, not to form a union church, for he felt that would be a great error, but to unite under one denomination. For instance, if in one community there are Methodists, Presbyterians and Baptists, the strongest in numbers should establish their denominational church and members of the others yield their personal preferences and join with them. Then the three organizations combining their finances can well employ a brainy man who will be able to attract the young people. Of course the speaker admitted the impossibility of carrying out this plan in many communities because some people are so denominational rather than Christian that they will still stick to their prejudices rather than unite for an opportunity to do good. The speaker further urged that the church take up social activities with greater zest, even urging a hot Saturday afternoon game of football, and athletics in every way, using such methods to make country life attractive as are used to make city life attractive. He spoke of the advantages of boys clubs, referring especially to the America Scouts. He also urged the establishment of libraries. If there is no other way to secure them the country should establish libraries in all rural communities.

One speaker, a lady from Yolo, took the ground that social activities could be better controlled by a country club for country people. Her belief in club life as the social center was confirmed by observations of one country club maintained by rural people which was exceptionally successful in adding attractiveness in social and literary ways and had also been a strong factor in the artistic upbuilding of the community. Her reason for preferring the club to the church for this form of activity was that there was less liability of friction.

Prof. Roberts of Palo Alto led in the discussion on the country church and endorsed the attitude of Rev. Mr. Hicks. He added that practically every successful life has been founded upon the proper observation of the eleven commandments. He referred to the good stuff in the average youngster born and brought up on the farm and urged the boys who were present to secure the best education possible that they might gain opportunity for greater work and greater accomplishment, also to make money. On this latter point, Prof. Roberts has little patience with those believing money to be a secondary matter. He would see the youngster make every effort to secure money honorably. Money is needed for the highest development. Above all he urged the upbuilding of the spiritual life that leads to highest and best endeavor.

The Labor Question.

The "blanket man" was discussed from all sides, and as a rule not to his credit. The Japanese laborer was touched rather mildly, and the discussion resulted in a practical argument that the laborer should be given more consideration on the ordinary fruit ranch. The bunk house and the indifferent food which is usually provided are the causes of the low grade of men who can content themselves with conditions of farm labor in California. The cottage for the laborer's family was deemed one of the best ways of encouraging a better class to accept work in the orchards. Another point was to make the products of the community as diverse as possible that labor could be guaranteed the year around to those who were dependent upon it for their livelihood.



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This is the ***Troutman Orchard Heater*** and it is no prospect nor experiment, because it has been tested and affords absolute protection. Can you afford to take a chance on losing a crop which has cost you the labor and anxiety of a year? Josh Billings said: "It is no credit to a cow to give a pail full o' milk and then kick it all over." ***Send for descriptive matter*** and horest testimonials. Special prices if ordered this month.

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100,000 **2-year old Sweet Stock,** extra large, strong, sun hardened plants, topped at 10 inches and just right for removal. These can be successfully planted now, will stand lots of exposure, and make splendid bedding stock for next fall. **Special Price,** Large Size.

One year old sour stock for 1911 **Two year old sour stock for 1911**

Chas. S. McMillan, Citrus Nurseryman
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Sour Orange Seed Bed Stock **For Fall Planting**

Also Sweet Stock. This is heavy stock eighteen months from seed and can be successfully planted in nursery now, making large trees for budding next fall. **Plant Now.**

3,000 1½-year old Valencias, extra fine. **A few Eureka Lemons left.**

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Why not buy the best? I have about 150,000 one year sour stock, also a large amount of two year stock, both sweet and sour.

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SOIL FERTILITY.

W. F. Sutherst, Ph. D., F. I. C.,
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The subject of soil fertility is once more to the front as a result of some recent investigations which in a sense have made it more puzzling and complicated than ever.

Essentials.

The fertility of a soil, in other words its power to raise crops, is known to be a function of the mineral plant food it contains (including water), size of soil particles, organic matter and soil bacteria, and it is absolutely certain that if one of these necessities is absent, the fertility is reduced to zero; but in some cases all have been present and still poor crops are produced. Some light was thrown on this subject some years ago, when it was proved that plant food could exist in the soil in a form that the roots could only take in minute quantities, but by cultivation, liming and other processes, could be rendered available. The small profit however obtained on farm produce, especially in Europe, induced the farmers to add mineral plant food to the soil in a form readily taken up by the roots, instead of waiting for the locked up substances to become available. Such substances as nitrate of soda, superphosphate and potash, were put on the market; and to their use must be ascribed the enormous yields of crops obtained in Europe, as compared to the states. The fertility of any soil is rated by ingredients present in the smallest quantity, just as a fleet gauges its speed by the slowest vessel, but it is extremely rare that one ingredient is entirely missing, so that one sees some kind of vegetation growing everywhere though the plants may be very far apart. Of course if a poisonous substance occurs in the soil, all fertility calculations are upset.

Mission of Bacteria.

The mineral plant food of soils has received most attention by the soil experts, but soil bacteria and their effect on the crop yields have been rather neglected. Recently, however, experiments were carried out at the Rothamsted Experiment Station in England on this subject with most astonishing results. Samples of soil partially sterilized, whereby part of the bacteria were destroyed by heat, gave increased yields of crops up to 100 per cent, and other samples sterilized by disinfectants gave yields varying from 30 to 50 per cent increase. This curious phenomenon was explained by proving that the heating of the soil killed most of the bacteria, but left unattacked those which produce ammonia out of the organic matter present in the soil. There is a certain temperature, about the boiling point of water, when all bacterial life is destroyed, but some are killed far below this. So by heating any substance such as a soil sample to a temperature below 212 degrees Fahrenheit, some of the bacteria will survive, others be destroyed. Not only is this an advantage in itself, but it gives the remainder a chance to multiply without opposition. The enormous number of bacteria thus produced will attack the complex nitrogenous matter in the soil, and convert it in a short time into ammonia, which the plant so easily assimilates.

Chemical Effect.

The effect of heat on the soil can also include the liberation of ammonia in a chemical way: any compound of ammonia heated with chalk, will liberate carbonate of ammonia which splits up immediately into ammonia and carbonic acid. This case has not been mentioned as a probable cause of the ammonia increase, but since the majority of soils contain chalk it is most likely that some ammoni is produced in this way. The reaso for the extraordinary fertility of o desert lands can be attributed to t intense heat to which it is subject during summer. This is sufficient bring about the increased activity the ammonia producing bacteria, and other less known effects, and the absence of rain permits this available plant food to remain in the soil till utilized by the aid of irrigation.

THE CITRUS OUTLOOK.

The following paragraphs are gleaned from an interesting interview with B. A. Woodford, manager of the California Fruit Exchange, in a late issue of the New York Fruitman's Guide, during his recent visit in New York City:

"While we do not agree with the railroads' estimate of 50,000 cars, we are perfectly willing to admit that California will have this season probably the largest citrus crop in the history of the industry. This state of affairs will prevail in both northern and Southern California, and takes in, as you will note by the use of the word 'citrus,' lemons as well as oranges. Up to date the quality of the fruit promises to be exceptionally fine, and as the proportions of the crop indicate, the sizes will be good.

"The lemon acreage is being increased all the time. The growers, encouraged by the assistance rendered them by the new tariff, have taken courage and are setting out more trees. This season the returns, too, were encouraging, owing to hot weather prevailing through the West and Middle West. At the same time it is not to be thought that the revised tariff was entirely responsible for the good returns made by California lemons. I have been shipping lemons from California for the past seventeen years, and I remember one or two years in the times when the tariff on Sicily lemons was practically next to nothing, when, owing to general market and climatic conditions, we had two years or so when prices were just as good as they were this year.

"Roughly speaking, there are about 20,000 acres now set out to lemons in California. We need another 20,000 before California can supply the United States with a sufficiency of lemons to meet all needs under any and all circumstances. Bringing a lemon orchard into remunerative bearing is a job that requires patience, nerve and capital. You cannot plant a lemon as you plant a potato. It will take you from ten to eleven years to bring your orchard into what I have called a really remunerative bearing state, and it will cost the man who wants to invest in such

Rex Lime and Sulphur Solution

The Famous Fruit Tree Spray and Animal Dip

This Spray has been sold throughout the United States more than any other spray in use, and the demand for same is constantly increasing.

Peach and plum trees should be sprayed early in the fall as soon as the leaves drop and again in the spring just before the buds open. Also

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If your farm or orchard is not producing all you think it should, if you find you are working hard and only breaking even, write us about your problems.

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Increases Yield of Alfalfa
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Mechanical Analysis (five grades of fineness)	$1.00
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All the above with Phosphoric Acid, Chlorine, Alkalinity, and approximate Humus	4.00
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SAMPLES—Take surface sample from first foot: subsoil from between 2½ and 3½ feet depth; deep subsoil from between 7 and 8 feet depth. One pound is enough for a sample if well mixed before dividing down. PRICES—These prices are in force only while advertised.

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a proposition, from $1100 to $1200 an acre before, at the end of, say six years, he has his trees in such a shape that they are to be considered in any way a commercial proposition. A man needs a lot of encouragement from every source if he is to lock up his money in such an investment, and then at the end of his ten years take chances on the vagaries of the wind and weather, and the fluctuations of the market—knowing all the time that he is dealing in a product which cannot be held for more favorable times, but has to be moved right along, willy-nilly. My figures as to the cost of bringing an orchard into bearing per acre are based on that knowledge that comes from trying it one's self."

MUTUAL ORANGE DISTRIBUTORS.

The Redlands Review calls attention to the fact that this institution was organized only four years ago. The Mutual Orange Distributors of San Bernardino county has developed until it is one of the largest marketing agencies of this section, the past year shipping 1700 cars of oranges and distributing to the growers throughout the various packing associations a total of $1,500,000. These figures were the principal features of reports at the annual meeting of the directors of the organization held in the main offices on East State street. There was much other interesting data in the reports, however. The organization markets for eight associations, the Mutual of Redlands; Bryn Mawr Fruit Growers and Henry Fuller & Sons of Bryn Mawr; Colton Orange Growers' Association, Highgrove Orange Growers' Association, Rialto Orange Growers' Association, Highland Fruit Association and East Highlands Citrus Association. The output of the eight associations has steadily increased and this year the total was only a few cars under the total of last year, while the total crop was much less.

THE SEASON OPENS EARLY.

Orange picking began in the Success orchards in the Porterville district October 13. Within the week, packing will be on in full swing in the various houses. Some of the exceptionally early fruit has already been shipped. October 13 there was consigned to a Los Angeles fruit firm twenty boxes of early navels, which will strike the southern markets at a time when the Valencia crop is almost entirely cleaned up.

This year there will be six packing houses in operation, in addition to the Comet Association, Strathmore Association, two Zante Association and Plano Association houses, all of which are properly within the Porterville district. It is estimated generally that the entire output of the year will be fully 30 per cent in excess of the shipments of last year, which will mean not far from 3500 cars.

Fruit is especially sweet this year, of more than average quality, and what is most encouraging of all, not more than 10 per cent of the oranges are showing thrips marks. The injury to grade from this pest will this year be negligible.

Let us foster this inherent impulse that finds its best expression in the betterment of things around us—that leads the true lover of nature to turn instinctively to tne cultivation of the soil, to the care and development of our gardens and flowers, and thus do our full duty toward beautifying our community and adding to the value and attractiveness of our home.

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Pipe, Pumps, Steam and Gasoline Engines. We have the largest A1 stock of second hand machinery on this coast, and at the right prices. Tell us what you want and we will give you our best figures. Mention this paper.

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5,000,000 Eucalyptus Trees

We have a large supply for **November Planting.** Our long experience as growers and shippers places us in a position to give our customers the very best service possible. This should mean something to you, Mr. Buyer. The proof of the pudding is in the eating; try us with your order. We are also large growers of **Apple, Pear, Orange and Lemon Trees.** Write for prices. Address

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Choice trees, 3 to 14 feet, from 20c each and up; special low prices on lots of 200 and over. If contemplating planting a walnut grove, it will be to your interest to correspond with us at once, as the stock is limited and the price sufficiently attractive to clean it out quick.

Write today.

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FOR CALIFORNIA SOILS

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Tree and Shrub Fruits

PRUNING PEACH TREES IN ROGUE RIVER VALLEY.

The proper pruning of the peach begins at planting time. Cut back the stem of your young trees to as near a uniform height as possible, taking care always to see that plenty of live buds are left for sprouts. Upon examination some buds will probably be found to be blind and others injured in transit, and so, to insure the growth of a sufficient number of sprouts, always leave from two to six small twigs (cut about three inches long) on the stem, even if higher than your standard set for branches. By watching these trees during the first summer's growth, they may often be lowered by cutting out the top of those where lower buds have been induced to grow, by reason of the start being given the tree from the higher sprouts. The pruning which may be given the tree during its first spring and summer I regard as of most importance, until the tree becomes of full bearing age. All dead and surplus twigs should be cut off during the first spring and summer. From three to five sprouts coming out at different places on the trunk will be sufficient to form the body of the tree.

Having passed the first summer, the following spring's pruning will consist mostly of heading back or shortening in these sprouts left for the body. The second spring's pruning will be practically a repetition of the first, save the cutting out of a few limbs that appear to be undesirable. Quite a few limbs and twigs may be left at this pruning, which in future prunings should be taken off. I refer mostly to the small limbs and twigs which are close to the ground, which, if allowed to grow another season, would begin to bother considerably in cultivating, yet will produce the best of peaches for the present season. At this age they are generally spoken of as three-year-olds, and will produce their first crop.

The following season, or at four years of age, your trees should be practically in full bearing and the tree should be opened up some; that is, some of the center limbs taken out that the sunlight and air may enter, and thereby prevent smothering of buds and twigs all through the center of the tree. With this year's pruning comes the necessity of much thought and study, as each grower should work out the best method of pruning under his own conditions of soil, etc. In general, the tree should be tipped each season and branches thinned out, so as to allow plenty of sunlight and air through the entire tree and to keep the limbs shortened in. The tendency of the peach is to produce its fruit on the tips of the limbs and only on last season's wood growth; so, without tipping back, the limbs soon become long and slender, with the fruit only at the extreme end, resulting in a poorer quality of fruit and a less thrifty tree; in fact, it is this treatment that is responsible for the belief that the peach is of short life. Given proper care and pruning, a peach tree in Rogue River Valley will remain vigorous and productive a life-time.

I consider any time here during the dormant season a good time to prune, as I have never seen any injury from so doing in the past twenty years. The spring is the most natural time, however, and the earlier in the spring the work is done the more vigorous the next season's wood growth, and the later the less wood growth. My experiments have led me to believe that pruning after the fruit is set will be practical, inasmuch as the tree seems to suffer no injury and makes a sufficient growth. You have the advantage of pruning for a crop, should a large per cent of the buds be defective from disease or killed by frost. I cannot agree with some summer pruning enthusiasts, however, as my experiments lead me to believe the pruning should not be left till too close to the pit-forming stage of the fruit, as the wood and bud growth for next season will prove unsatisfactory.

My method of pruning a bearing peach tree is as follows: Having carefully looked over the tree, proceed to cut out all large limbs thought undesirable, then single out a limb and follow up with your eye, from base of limb to a point as low on the main limb as is possible to make a cut, yet leave a sufficient number of bearing sprouts for crop; considering at the same time all the other limbs, so you may have a tree of even height. Next, thin out twigs and clip all that are over eight to twelve inches in length, being careful to leave sufficient fruit buds, as this is where you get the fruit. In thinning out the twigs, aim to occupy as much space as possible without leaving two twigs together.

By this method you have seemingly cut out the best and most vigorous limbs at the top, yet I fail to see any harm in so doing, as the entire strength of the tree immediately goes to the twigs left, with the result of proper development. By this system the tree, after reaching the age of six or eight years, may be kept at the same height, excepting when the trees are planted on extra heavy land, which is not the best for peaches. The two main points in the production of high-grade peaches are those of pruning and thinning. By due consideration of these, we put vigor into the tree, and instead of a slender-limbed, half-dead tree we have a stocky, dark-leafed tree that will live seemingly forever.—Rogue River Fruit Grower.

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For San Jose scale, apple and pear scab, peach leaf curl, peach blight and peach worm. 36° Baume, standard of the world.

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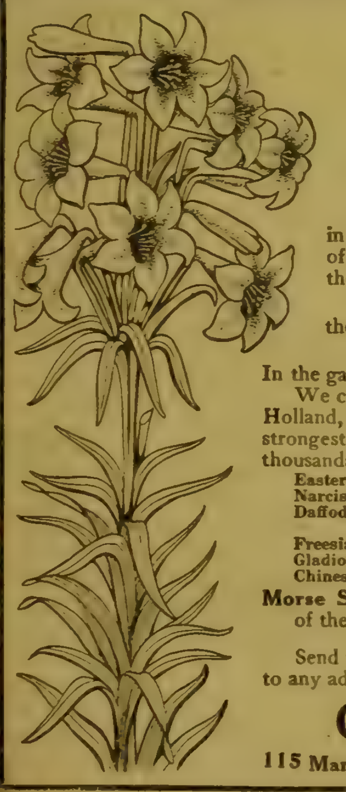

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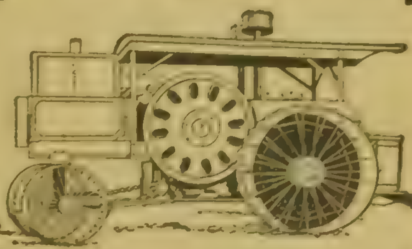

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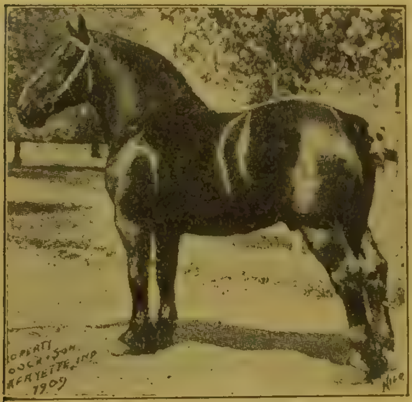

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just arrived. At the recent California State Fair we won sixteen prizes on eighteen horses shown.

If you want one of the best, come and have the first choice. Our guarantees are the best. Terms liberal. Pacific coast stables located at the California State Fair grounds.

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Save from $1 to $2 per horse

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New and improved ***1908*** Model Ball Bearing and all enclosed gears running in oil. The price at your dealers' all complete, is **ONLY $8.50**

Every Horse should be Clipped Clipped horses look better, feel better, work better, and are easily cuffed. No machine ever made runs so easily, clips so fast, and lasts so long as this ***Stewart No. 1.*** It is fully guaranteed and must please or the purchase price will be cheerfully refunded.

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It is the greatest clipping machine of all time.
If your dealer hasn't it, write to us about it.

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Live Stock and Dairy

Dairymen and stockmen are requested to write of their experience. Mrs. Sherman is always willing to answer queries and this, with experience of other workers, will make this department of greater value.

ONCE AGAIN.

By Mrs. M. E. Sherman.

The question of tuberculosis was recently considered in these columns but it does not readily take hold of the dairyman's understanding. I have now several letters on the subject to answer as well as the discussion of the matter as taken up at the Tulare Grange. The idea of loss of the cows by having them destroyed by the authorities seems to be in the mind rather than anything else. While the dairyman that has this disease in his herd is unfortunate, still it can hardly be made a matter of public payments as the cow industry is not great enough in wealth to make it a political object to give us a subsidy for the cows destroyed. The proper way to look at this matter is that a cow afflicted is worthless and if left in the herd is a source of infection to the others. The only way to save the herd is to promptly remove anything that is shown by the tuberculin test to be diseased.

Disease of Filth.

The idea that tuberculosis is an act of God must be abandoned. It is a disease of filth and overcrowded conditions of stables. Now to stamp it out of a herd. As a comparison let us consider the bacillus as a weed seed. Any farmer knows that if he destroys the weeds before they perfect seeds, that next year vineyards and orchards will have fewer to remove, and if this clean cultivation is kept up year after year, in time all will be removed. The same thing happens in the dairy herd. Year after year the cows are tested until all those infected are removed and the herd is free. It cannot enter a herd unless introduced by a diseased animal.

Testing.

The California dairyman is not standing by himself in this matter, for one after another the different states are refusing to allow animals to be shipped into them without certificates of tuberculin test. We shipped a second young sire to the U. S. Government last week and he had to be tested before he could go into New Mexico. One copy of this certificate made by a state officer must be sent to Sacramento, one to Secretary of the Cattle Commission of New Mexico, one to the purchaser, and the fourth is retained by the seller. All this work, beside the testing, cost the sum of five dollars. This cost is higher than usual but the seller is supposed to consider it in the sale of the animal.

Anthrax Cure, Milk Fever Outfits. See O. J. Weber Co., 225-227-229-231 East Sixth street, Los Angeles.

Aid of University.

The University stands ready to aid the dairymen in stamping out this disease. Whenever a group of men desire to take the matter up the University will send an instructor to show them how to test the cows by practically doing the work. In turn this group of men are expected to show others how the test is applied. The temperature charts are filled and turned over to the University by the dairymen for reading whenever they test their animals. These charts are filed and kept as memoranda for future reference. The testing does not affect the cows more than having strangers around them. A herd used to receiving guests in the stables will not drop in their milk while those unused to the social whirl may be made nervous and fall off a little bit.

Prices of Butter Fat.

The extremely high prices of butterfat make this a good time to test the cows as the loss of a few will not push the creamery check away down below the point of profit. The present high prices are bringing a rush of people into the dairy business that have not studied the matter at all. I look to see many going broke at the prices they are now paying for worthless cows—$60.00 to $75.00 for cows that will not pay for the milking is the going price. Then there is the cheap buyer in the market thinking he can make a profit out of culls. I heard of a case where a man bought Jersey grades for thirty dollars a head. As the prices were less than the animals would bring as beef it arouses suspicion that there might be worse trouble behind.

Abuses of Tuberculin Test.

Tuberculin has been abused in this way: If an animal is to be tested, it may be given a shot of tuberculin before the testing, when the results will be negative for some months' times. When a herd is in the hands of a dishonest man and he thinks they are diseased, he can inject the tuberculin without taking the temperature before or after and then can say he does not know that they will react. If the purchaser chances to test them they pass all right. One of the Eastern states tried paying for the cattle that were too badly diseased to be used for beef. The jobbers made money by sending in diseased cows for the state to buy from the adjoining states. While confidence is said to be the basis of all business, it is not always well to be too confiding. There is good in everything. As the old lady observed, if we give even the devil his due, we must admit he is very industrious in the many ways he shows people to chase the nimble dollars as they flit.—M. E. Sherman.

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a big knee like this, but your horse may have a bunch or bruise on his Ankle, Hock, Stifle, Knee or Throat.

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will clean them off without laying the horse up. No blister, no hair gone. $2.00 per bottle,deliv'd. Book 8 D free. **ABSORBINE, JR.**, for mankind, $1. Removes Painful Swellings, Enlarged Glands, Goitre, Wens, Bruises, Varicose Veins, Varicosities, Old Sores. Allays Pain. Book free.

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Registered A. J. C. C. Jerseys
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The Whiting Jersey Stock Farm Co.
Is making the very best strains of blood fresh from the island of Jersey a specialty. **Whiting Jersey Stock Farm Co., Heber, Cal.**

Mrs. W. E. Talmadge of Sharon, Wash., won first prize on the best five boxes of Jonathans, first prize on plate of Delicious, second prize for plate exhibitions and the Inland cup for the best farm exhibited by a farmer on the Inland Empire system. She is in love with her ranch, which contains 46 acres in all and 10 acres in bearing trees.

JERSEYS AS DAIRY COWS.

By Geo. A. Smith, Corcoran.

In the great public competitive dairy tests at the Chicago and St. Louis World's Fairs the Jerseys proved the most economical producers of all dairy products. It should be noticed that the above covers all dairy products, including butter, cheese, and milk for all purposes. The awards at these two great Worlds Fairs show that the Jerseys won all the principal honors competed for in the demonstration. As a herd the Jerseys lead all others. In the dairy test at St. Louis the cow that returned a pound of butterfat for the smallest amount of nutriment was a Jersey and she was followed by 13 other Jerseys before a cow of any other breed secured a place. The highest rank attained by a Holstein was number 15. The fact that only one Jersey appears in the last half of the list shows that the breed stands pre-eminently first on the score of economy of production.

The Jersey breed now has 30 cows that have produced enough butter to entitle them to a place in the 700 pound list. Many other Jersey breeders are conducting year's authenticated tests in their herds and some of their cows will qualify for this list. Over 550 Jerseys, including heifers and cows of all ages have finished a year's authenticated work and have made an average butter yield of 508 pounds of butter each. The mature cows, five years old and over, made an average butter yield of 602 pounds each. This certainly proves that the Jersey cow is "the little giant of the dairy." Only a few years ago the dairy papers of the country were lauding the 300 pound dairy cow as the acme of perfection, and many dairies today are still under that amount and need a good Jersey sire to start them up toward the 400 or 500 pounds mark.

Here in California many dairymen have held to the stubborn belief in a dual-purpose cow, an animal that can be either used for beef or dairying, but not especially adapted to either. They are now beginning to realize that the Jersey is a special dairy-purpose cow of the highest usefulness and profit. She is slowly but surely winning her way, by her intrinsic value as a butter producer, into many of the best herds of the state. At the recent California State Fair, the Jerseys won all the awards in the Five Day Butter Contest with 17 cows competing, consisting of Jerseys, Holsteins, and Dutch Belted.

The Jersey breeders do not believe in seven-day and thirty-day records as they are not indicative of what a cow will do in a year. At the present time 55 Jersey cows are under a year's authenticated test under the supervision of the State University and are the only cows of any breed that are undergoing a year's test in this state. The Jersey breeders of this state are not ashamed to show what their cows can do in a year. The Jersey is not a cow that makes a great spurt on the start nor one that makes such phenomenal seven-day records, but she is very persistent and great at sticking to her work the year round, and when she completes her year's work she is ahead of all breeds, as is shown by the above figures, and sets a pace that is very hard to keep up with. A small yield each day is often overbalanced by persistent lactation and uniformity of production. A small quantity of rich milk frequently pays better than a much larger quantity of poor milk. The Jersey is the largest milker in proportion to her live weight.

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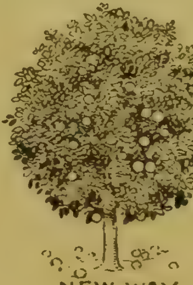

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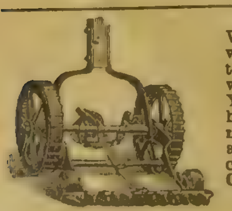

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The Ornamental Garden

AGGRESSIVE PLANTS.

It seems to me that we too often err on the side of making phenomena more simple than they really are. Plants are vastly more complex organisms than our formulated ideas recognize. Many of their phenomena completely baffled us. For example, I might mention what has been called aggressiveness in a plant, namely, its ability not only to occupy and maintain the soil but to spread and crowd out other plants. This is particularly evident in plants introduced from one country into another. Thus nearly all our weeds are of old world origin. The same is true of our permanent meadow and pasture plants, where ability to occupy and hold the ground against weeds is essential. In this respect our American grasses and clovers utterly fail before the foreign immigrant. Some other striking instances of the great aggressiveness of an immigrant may be cited. The introduced English violet is said to be one of the worst weeds in Mauritius; American cacti are becoming a pest in South Africa; the marvelous vigor and spread of the American water weed (Elodea) under European conditions is well known.

Several explanations of these and other phenomena have been advanced. The commonest one is that the plant is introduced but its fungous and insect enemies are not. Therefore the plant is released from all handicaps as it were and can exercise to the utmost its inherent energy. A second and related explanation is that every plant becomes held within limits by the competition of other plants in its native land and very often in the new environment the native plants do not have an equal restraining influence—because they have had to contend with a different set of competitors. A third idea is that an organism with the ability to spread at all becomes more energetic through the constant mixing of blood of the advancing population. All these ideas are interesting, but difficult if not impossible of experimental proof. The last suggestion receives some support from the fact that many weeds and other organisms run out after they have ceased to spread. The recent examples of the Russian thistle and the prickly lettuce are familiar cases. Such phenomena may be due wholly or in part to increase in enemies, but in many cases like the two cited there is not one iota of positive evidence. I think we ought to give such phenomena more consideration as they reveal traits in plants that transcend all our stereotyped and inadequate theories. The old gardener often treats his plants as if he regarded them as sentient beings. Perhaps we err in considering them too much as machines.—C. V. Piper in Science.

NASTURTIUMS.

For ease of culture, duration of bloom, brilliancy of coloring and general excellence nothing excels Nasturtiums. All they need is a moderately good soil in a well drained, sunny position, and from within a few weeks of the time they are sown until hard frost comes there is an endless profusion of their gorgeous blossoms.

The introduction of the Toy-leaved varieties has brought in a new class of compact, climbing habit, growing about six to eight feet high, with thick green-lobed leaves resembling those of the English Ivy. The flowers, which are borne in greatest abundance throughout the season, are of medium size and peculiarly cut and fringed, giving them an airy butterfly effect; very desirable for training over trellis, rockwork, vases, etc.

Nasturtiums are considered as hardy annuals, hence may be planted in the fall months or when the first rains set in. Do not cover the seeds too deep. A good rule is to cover each seed its own depth with soil, at the same time taking care to water carefully. Never water so much that the soil becomes saturated; nor even let the top get dry. Most varieties will germinate within ten days. Annuals may also be sown at any time during the spring months for summer blooming, care being taken to shade the young plants after transplanting, in hot weather.

"Now I am a lover of the old-fashioned flowers. For several reasons: They are as beautiful as any of the modern ones—many of them much more so. They require a small amount of care. They bloom freely, most of them profusely and some of them throughout the season. And, too, they can always be depended upon to do well under such conditions as prevail in the average garden."

An old plant is the nasturtium. "Sturtions" our grandmothers used to call them. They bloom generously, and like the sweet-pea, if prevented from ripening seed.

Balsam—the "lady's slipper" of former generations—is deserving a place in all collections. It blooms profusely, comes in a wide range of color and is easily grown. In order to give the flowers a chance to display their charms effectively, it may be necessary to clip off a good many of the leaves along the main stalks. The balsams of your grandmother's time were single flowers, but those of our day are as double as a rose. The flowers cluster so thickly along the stalk that they look like broken bits of wreathing.

ALMOND GROWING IN PALESTINE.

From a report just received from Consul Thomas R. Wallace at Jerusalem, we learn that the almond is being planted extensively in the plain near Jaffa. The soil and climate are favorable for its production, and it con be grown with little expense. It is taking the place of the wine and olive, yielding more profitable returns and requiring less care in cultivation. The almond orchards are just coming into bearing and the results have been quite satisfactory to the growers. The yield for 1909 was 300 tons, valued at $38,600, the product being exported to France and Italy. The successful cultivation of this crop has encouraged the planting of large areas and it promises in time to become one of the leading profitable industries of the planters near Jaffa.

The Ninth Annual Convention of the National Nut-Growers' Association will be held at Monticello, Florida, November 1st, 2nd and 3rd, 1910.

Garden and Field Crops

HOW TO RAISE PEANUTS.

By Prof. J. E. Waggoner, I. H. C. Service Bureau, International Harvester Company of America.

There is perhaps no other nut so generally known and so universally used as is the peanut. To within the past few years its principal sale was to vendors and in confectionery stores. Wherever a few people were gathered together some ambitious boy filled the air with the cry "Fresh roasted peanuts." But now men have found other uses for it, as an oil producer, for stock food, and as a soil redeemer. About forty per cent. of the berry is oil; it will produce more pork, acre for acre, when used as pasture in connection with corn than cowpeas, rape, sweet potatoes, or sorghum and restores nitrogen to the soil as do other leguminous crops.

Most seed companies list but two varieties, the large white kind, Virginia white, Virginia red, and Tennessee white, Tennessee red, which are used largely for human food. The other variety known as Spanish Peanuts are used principally for stock feeding purposes. They are smaller than the white species. The uses of these varieties are not confined as stated above, but may be interchanged. As a rule the Spanish peanut is a surer and heavier fruiter than the others, and is not as particular about the condition of the soil. A bushel of Spanish peanuts weighs twenty pounds while the white ones weigh twenty-two pounds.

The greatest degree of success in peanut growing is reached in a light sandy soil, not overly high in vegetable matter, not necessarily high in nitrogen content, for the peanut gathers most of its nitrogen from the air, well drained, and containing a medium amount of lime. The lime will make the ground friable, supply the calcium, and give the peanuts a light color, which for a commercial product is a very important consideration. If the soil is lacking in lime it may be supplied at the rate of 1000 lbs. to the acre with remarkable results.

This crop requires about the same preparation of soil as do corn, cotton and oats. Plowed flat to a depth of five to seven inches and thoroughly harrowed will put the seed bed in splendid condition.

The fertilizer to be used depends on the soil, but as the peanut is of the legume family it does not require a nitrogen fertilizer. In some cases, however, a highly nitrogenous fertilizer gives a slight increase in hay production but not in pods. Where it is found necessary to fertilize, the best results have been obtained by using a fertilizer distributer just before planting the nuts.

The large nuts may be hulled and dropped by a corn or cotton planter or by hand to suit the convenience of the planter. At the McNeil Experiment Station, Mississippi and Spanish nuts were soaked from 36 to 48 hours, then dropped by hand in rows 2½ to 3 feet apart, 10 to 12 inches in the row and covered from one to two inches deep. To prevent a crust forming before the plant appears it is best to keep soil stirred with a light smoothing or weeding harrow. The Osborne Peg Tooth Harrow gives splendid satisfaction when used in this connection. The plant when small is brittle and will not permit harrowing.

The cultivation is practically the same as for corn and cotton. The soil should be stirred to prevent baking, but deep cultivation near the plant is apt to prove injurious except when it is very small. Surface cultivation gives the best results if the soil has been well prepared. The practice of covering plant with dirt during fruiting season is not only expensive but has been found to be injurious to the plant.

The little Spanish nuts may be harvested by pulling, but with the large white varieties it is best to plow them out, then follow behind, shake off the dirt and turn nuts to the sun. After drying for five or six hours they should be piled in small cocks with the vines on the outside. After allowing to cure partly in small piles they should be stacked. A pole stack with some brush to keep vines off the ground and with some heavy grass to top it out has given good satisfaction. Later they should be hauled to a shed where nuts may be pulled or pounded off during bad weather, the vines then stored for hay.

If planted early it is easy to produce two crops a year. Peanuts make a very good catch crop with corn and fit well into the rotation with oats. As a soil builder peanuts come nearer equalling cowpeas than any other crop we can grow. From the standpoint of hay, peanut vines surpass timothy and equal clover.

The yield of peanuts varies from 30 to 150 bushels per acre, and as a rule can be marketed for from $1.25 to $1.50 per bushel. The Spanish variety is the best and surest crop. An ordinary yield of Spanish nuts at the McNeil Experiment Station, Mississippi, has been 1640 pounds peanuts and 2452 pounds hay per acre, while with the white kind a single result gave 1792 pounds nuts and 3520 pounds of hay. The white variety selects its soil with more care than does the other, and often if conditions are not right, fifty per cent of the pods will be empty.

SPINELESS CACTUS DISTRIBUTION.

The United States Department of Agriculture will distribute in the spring of 1911 about ten tons of spineless prickly pear cuttings. The stock is grown mainly at Chico, California, and at Brownsville, Texas. Out of 30 varieties which the department has grown in the past, eight or ten are now being propagated for distribution to those who may wish to test them as an economic crop. These plants will not succeed outside of California, the coastal region of Florida, Texas south of the Texas-Mexican Railway, and southern Arizona. These will not succeed where the temperature remains below 20° F. for any length of time.

All applications should be made to the Office of Farm Management, U. S. Department of Agriculture, Washington, D. C., before the first of January, 1911.

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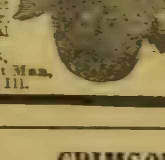

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Next Week

The next issue of the California Cultivator will be of special value and well worth preservation, especially by those who may have occasion to fight insect or fungous pests. As there are but few agriculturists not compelled to do that, we assume that paper will be of general interest. The feature is a spray calendar—we were about to say "complete spray calendar"—but it is impossible to prepare a complete calendar which will be complete tomorrow. However, this one will contain formulas for practically all the better fungicides and insecticides. And pests affecting various fruits, with common and scientific name will be given and proper formula for each pest referred to by number. The article will fill some seventeen columns so that some of the regular departments will be crowded out. It is well worth the additional space and we mention that fact this week that the number may be looked for and preserved when issued.

An Eastern Expert's Opinion

On his way home from acting as presiding judge at the Watsonville apple show, Mr. Geo. E. Rowe of Grand Rapids, Mich., called at the Cultivator office and at our request gave the following estimate of the apple annual and of the California fruit growing industry. Mr. Rowe has judged many eastern horticultural events, which makes his opinion of exceptional value.

"The California Apple Annual held at Watsonville in many ways was the most remarkable exhibit of fruit ever put up in the world. At the World's Fair in Chicago and the Pan-American Exposition there was never more than a single carload of apples on exhibition at one time. At the National Apple Show at Spokane last year there were something less than thirteen carloads on exhibition, while at Watsonville this year there were over 36 carloads of 600 boxes each, making 21,000 bushels, or not far from 3,000,000 individual apples. If laid out in a single line, the belt would be equal to 206 miles of apples.

"Aside from the magnitude of this exhibit and its relative showing to other exhibits of fruit, it was equal to anything ever exhibited for quality, the commercial pack by carload lots scoring as high as single plates of fruit at the average state fair.

"California has been known as a mineral state and as a citrus fruit state, but up to the present time but very little has been known of her great apple industry, and while apples are not grown all over the entire state, there are a few valleys and a large portion of the foothills that respond to the demands of the apple orchard and give the very best results.

There are, without doubt, more apples grown in the Pajaro Valley than any other territory of the same acreage in the world. The valley is only about fifteen miles long and eight miles wide, yet its output this year will be over 5000 carloads."

Commercial Fertilizers

Bulletin No. 26 of the Agricultural Experiment Station at Berkeley, written by John S. Burd, gives results of fertilizer inspection work of the California Fertilizer Control for the year ending June 30th. The bulletin gives ingredients of various commercial fertilizers offered for sale in the state, also the chemical analysis of hundreds of different samples sent by purchasers and secured in the open market. Exact valuations are placed on each sample submitted on the basis of the schedule of trade values fixed by the experiment station. It states that it wishes it understood that in adopting this schedule it is not assuming to dictate prices, but simply to form a basis upon which the true valuation may be determined according to the market values of the elements purchased.

This schedule fixes the following prices per pound for phosphoric acid: available (water and citrate-soluble) 6 cents; insoluble in mixed fertilizers 2½ cents; in fine bone and tankage 4½ cents; in medium bone and tankage 3½ cents; in fine Thomas phosphate powder 5 cents; in medium Thomas phosphate powder 3 cents. For nitrogen: in ammonia salts 18 cents; in nitrates 17½ cents; organic form in blood 21 cents, in mixed fertilizers 20 cents, in fine bone and tankage 20½ cents, in medium bone and tankage 16 cents. For potash: from sulphate 6 cents; from muriate 5 cents.

This bulletin will be invaluable in the hands of the intelligent orchardist.

Dry Farming

Over 1200 delegates representing 250 million acres of dry land in the United States and a total of 5 billion acres throughout the world, and believers in dry farming generally feel that a more enlightened handling of dry farming operations received great impetus through the congress recently adjourned at Spokane. The problems discussed were conservation of moisture, desire for knowledge in farming both from a practical and a theoretical standpoint, and the general uplift of humanity through lessening the burden of the struggling and oppressed through improving farm life, education, restoration of waste places, and reclamation of "bad lands," also the necessity for federal aid and cooperation in conquering the forces of nature. Perhaps the keynote of the convention was education.

One action taken looks to the end of an endowment fund of a half million dollars, the interest to be used in the extension of scientific and experimental work.

The International Dry Farming Exposition was a great feature of the Congress. America took second place, with Alberta, Canada, carrying off the chief prizes. Colorado Springs was chosen as the place of meeting for 1911 with Alberta making a strong advance bid for the meeting of 1912. The president elected for the coming year is J. H. Worst of the North Dakota Agricultural College. John T. Burns was re-elected secretary-treasurer. His headquarters will be established at Colorado Springs in December.

Country Life Commission

Country Life was recognized at the Farmers Week program at Davis by giving one entire day to discussing its problems from the social and educational standpoint. It must be admitted that the question of the almighty dollar continually crept in. Some speakers deprecated this and argued that the farmer should be above considering finance during the discussion of matters which mean so much to the youth. But one or two hard-headed farmers, not so old either, maintained that if the question of dollars were ignored, ranch life would soon cease to be attractive to the young people. Farm life must be profitable to be attractive and to secure for those who follow it the comforts and privileges which city people have.

One result of the conference was a resolution unanimously adopted that there should be undertaken an effort to develop the full possibilities of country life in California. The question of public schools, especially those in rural districts, should be made the subject of state wide discussion. To attain this end the chairman was requested to appoint a committee whose duty should be to canvass the field, and if deemed advisable, call for a state conference of farmers and educators and others interested in country life to consider this educational problem.

Touching upon the education of the youth of the rural districts, one speaker emphatically stated that young people should not be brought up with the idea that a liberal education aided in escaping hard work. He said that too often youngsters were started to school with the idea that they were to secure sufficient knowledge to escape the drudgery which their less fortunate companions had to undergo, and following out this idea, they made complete failures of their lives. Education only gives opportunity for greater labor and greater accomplishment.

Farmers Institutes

J. B. Neff in charge of Farmers Institutes for Southern California announces one-day institutes in San Luis Obispo county at Templeton, November 18, and Paso Robles November 19. Arrangements are perfecting for others at Beaumont, Banning and Thermal probably near the end of November. The week of December 12 to 17 will be given to Imperial Valley. Information as to towns and dates will be given in the Cultivator as soon as definitely planned.

Clubbing Orders

For the information of our many readers who desire to order their year's list of magazines through us, we wish to announce the early publication of our catalog. From the numerous inquiries already received, we realize that this annual feature is looked forward to with appreciation by our subscribers. We have plans for a very attractive list of offers this season at the usual attractive prices, and space will be given in our pages for this list as soon as possible. We trust that those interested will wait its appearance and favor us with an early order, as we anticipate a very large season's business.

Walnut gathering is proceeding satisfactorily in all walnut growing sections of the state. Definite statement as to the output cannot be given as yet, but it is certain that the damage from blight is more serious than earlier anticipated. The output is being picked up at exceptionally high prices, and the returns, even with the shorter crop, will be exceptional.

The Ninth Annual Convention of the National Nut-Growers' Association will be held at Monticello, Florida, November 1st, 2nd and 3d, 1910.

Agricultural News Notes of the Pacific Coast

Northern California

Pomona Grange of Sonoma county met at Santa Rosa on Wednesday of last week.

There are 19,000 acres of grapes, and 3200 acres planted to Bartlett pears in Sacramento county.

Clarence Griffith of Lomo, Sutter county, recently sold four hogs which brought him $82.45, over $20 each.

Too great heat in evaporating apples caused the burning of the MacDonald apple drier at Santa Rosa last week.

Sonoma county had another serious forest fire last week and it was with difficulty that the big bridge near Laguna was saved.

This season growers at various points in the Stockton delta lands expect to ship to Eastern markets fully 300 carloads of celery.

Vacaville, Solano county, has shipped 1015 cars of fruit since the opening of the season. To same date last year the total shipments were 989.

The big fruit dryer at the John Valentine place at Molino in Sonoma was destroyed by fire on Otcober 12 and a large quantity of fruit was also consumed.

Announcement was received from State Horticultural Commissioner J. W. Jeffrey that the State Fruit Growers' Association convention would be held in Stockton during the first week in December.

The Napa branch of the Farmers' Union is going to hold a series of open meetings during the fall and winter and invites the general public and especially those interested in agriculture to attend.

Nine hundred acres of land in Glenn county have been sold to a company of men from an Eastern state who will plant the same to Smyrna figs. Work has already been begun on the project.

The 180-acre vineyard of the Schuler Vineyard Company, located near Lodi and through which the Traction Interurban line passes, will this year yield 15,000 crates of table grapes and forty cars of wine grapes.

The prices paid by Humboldt county's creameries for deliveries up to the 15th were: Capital 37 cents, Central 37 cents, Libby, McNeil & Libby 36¼ cents, Grizzly Bluff 36 cents, Swift & Co. 36¼ cents, Sunset 36½.

Unprecedented prices are now being offered for Humboldt county apples, particularly for the product from the Mattole section. The entire crop of the Etter orchard comprising several thousand boxes, has been sold at $2.25 per box.

Nearly 20,000 almond trees are to be planted on Butte county lands this year, the farmers hereabouts having at last come to the realization that the soil in this vicinity is unexcelled for such a crop.

Seven dollars and ten cents per box for Valencias was the price received by the Stewart Fruit Company for a consignment sold in New York early in the week. It is claimed by their Porterville manager that this is the season record.

Central California

Porterville started her packing houses on navels October 24th.

The total attendance at the Apple Annual at Watsonville was 30,000.

Grape growers near Stockton plan the erection of a co-operative winery.

The fifth annual Tulare County Citrus Fair will be held in Visalia December 5-10.

A sardine cannery at Monterey recently packed 90,000 cans of sardines in twelve hours.

The Hollister Storage Company recently shipped ten cars of red oat hay to Portland, Oregon.

Exeter claims honor for the first shipment of oranges on October 18th from Central California.

A locoed cow became wild on the streets of Madera last week and caused great excitement before subdued.

An electric railway from Stockton to Modesto is building through Ripon and the graders are within four miles of town.

The students of the Porterville high school are engaged in planting wheat and other crops in the school gardens.

An interesting farmers' institute was held in Kerman last Saturday, farmers from a long distance attending and bringing basket lunches.

Ripon, San Joaquin county, is looking to the future as contracts have been signed for a system of irrigation which will water 71,000 acres of land.

The Kerman high school begins an agricultural course with a series of lectures by Prof. Kauffman, formerly professor of dairying, North Dakota Agricultural College.

On October 20, N. B. Reed of Fresno purchased a fine ranch of thirteen acres in the Cotati rancho. Mr. Reed intends to go into the poultry business on a large scale.

Pomona grange, consisting of the Visalia, Tulare, Orosi and Dinuba granges, will meet in Visalia on October 29. An interesting program is being arranged for the event.

Stockton is making preparations for the entertainment of the attendants at the State Fruit Growers' Convention to be held in that city the first week in December.

Practically every packing house in Porterville is in operation, or about to be, on the present citrus fruit crop. All estimates of the total tonnage of the crop this year place it at twenty-five per cent in excess of that for last season.

J. E. McAuley, and W. A. Irwin, have under way the development of what will be the largest single orange tract in California and perhaps in the world, their plans being to develop and plant out to oranges 1800 acres of Frazier valley land, in Central California, to oranges.

The Stockton Chamber of Commerce is desirous of securing signed statements from farmers of that county detailing profits derived from poultry, fruit, vegetables and other farm products raised on a given number of acres.

Southern California

The sugar campaign at Oxnard will close November 5th.

The Orange Street Fair management netted $400 for a start on next year's event.

In the El Cajon valley the raisin crop is expected to fall about 30 per cent below the normal.

A school of small rainbow trout has been planted in Strawberry Creek, San Jacinto mountains.

Los Angeles has a 17-year-old persimmon tree which has this year over 2200 fine specimens of fruit.

In the future the California Fruit Growers' exchange expects to manufacture about 2,000,000 boxes annually.

It looks as if exports from California of beans to Mexico will be cut off for the crops there will be large this year.

Lima bean threshing is proceeding rapidly and it is reported that the damage from the storm is not as great as feared.

Apple growers of Oak Glen and the Upper Yucaipa valley are marketing their crop that will bring in excess of $60,000 to this section.

Southern California's first popcorn shipment was on October 24th when a full car arrived in Los Angeles from Inglewood. It sold at 3½ cents.

The output of walnuts this season from the southern part of the state will be about 9,000 tons and will bring the growers well up towards two millions of dollars.

James G. Cortelyou, of Los Angeles, has sold his half-section ranch adjoining Imperial to D. Durkee, president of the San Dimas Lemon Growers' Association, for $42,000.

The American Beet Sugar Company pays $25,000 per year for five years for the lease of 23,000 acres of Ventura county land, 4000 acres of which are good farming land.

The directors of the Escondido county fair report that when everything is settled up the late exhibition will have just about paid for itself. Next season it is thought it will do better.

Vale & Gates unloaded near 1800 head of cattle at Beaumont, week of October 8, and drove them through to Warner's Ranch by the way of Hemet. The cattle were shipped from Arizona.

A new sugar factory is to be built in Orange county. It will be located in the vicinity of Huntington Beach. This factory with the one to be built at Anaheim will make the fourth sugar factory for Orange county.

The prize winning pumpkin at the late Escondido fair weighed 103¼ pounds and measures six feet eight inches in circumference. The total weight of twelve, which were all grown on the same vine, is 600 pounds.

The Santa Barbara Press says that in the reports on the walnut crop this year the nine-year-old, 15-acre grove of Stephen Rutherford, of Naples, will probably win the prize for productiveness. It produced 10 tons, equalling 50 pounds to the tree.

The Coast

The Fair Oaks orchard, near Prescott, Arizona, produced 18,000 boxes of apples this year.

The average yield of wheat in Walla Walla (Wash.) county this season was 18½ bushels to the acre.

The Boise, Payette and Weiser valleys in Idaho shipped out over $1,000,000 worth of prunes this season.

With sufficient moisture in the soil to enable farmers to seed and plow, fall work on the ranches of Columbia county, Washington, is in full swing.

Farmers in the neighborhood of La Mesa, New Mexico, are making preparations for the planting of their fall wheat crop. Quail will be plentiful in this vicinity this fall. Doves also are numerous.

The sale of 5140 cows and two carloads of calves from an Old Mexico rancho lying partly in Arizona, near Douglas, in Kansas City last week, is the largest occurring in that market this year. Price $3.05.

Victor Hyslop, winner of the grain judging contest at Spokane Interstate Fair, has been selected by the bureau of seed inspection of the United States department of agriculture for a position during the coming summer.

From 70 stands Geo. A. Cressy has taken nearly 6000 pounds of strained honey of the best quality. He says that he can ship to eastern markets from Hermiston, Ore., and make more money from a stand than he could within a few miles of his market.

The apple orchard at Cloverland owned by Florence Brothers of Asotin has been purchased by Spokane men. The orchard contains 75 acres of bearing trees and the price paid was $30,000. It is estimated that 20,000 boxes of apples of winter varieties will be marketed.

More than 1000 cars of apples will be shipped from the Payette valley in Idaho this year, according to figures given out at Payette. The largest fruit crop ever known in the valley is being harvested. The price of the better varieties is ranging from $1.25 to $1.75 a box.

Legumes play an important part in the dietary of the common people of Spain and the production is never equal to the demand. In 1908, the last year for which complete statistics are available, the importation of chick peas, called "garbanzos," amounted to $1,358,391, of which 10,369 tons, valued at $1,000,536, came from Mexico. At this price of a little over 4 cents per pound, it would seem that chick peas could be grown profitably in the United States for this market.

Ranchers, business men and educators from various parts of the Northwestern and Pacific states will meet in Spokane on November 17, to discuss plans prepared by the Country Life Commission of Washington for the establishment of redistricted rural schools and community centers. This is the initial step of a nation-wide movement, co-operative with the state departments of education, to teach the fundamental principles of agricultural and domestic economy and manual and industrial training.

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Practical Poultry Culture

PROPER CARE OF PEKIN DUCKS.

While duck raising is very profitable when thoroughly understood, the chances are that the beginner who starts in by guess, will be a "quitter" at the end of the first season.

The Pekins are large and fine in appearance, being nearly as large when fully developed as the old-time gray goose. These are known as the Mammoth Imperial Pekins.

They are large feeders, and while young grow faster than any other domestic fowl, with the possible exception of a gosling.

When properly fed, a Pekin duckling will weigh from five to seven pounds when twelve weeks old. The best time to market young ducks is when they are anywhere from ten to fourteen weeks old. After this they gain in weight less rapidly.

When buying stock ducks, get the best birds you can find, regardless of price. If possible, buy your ducks of someone in your own locality, providing this can be done without getting birds that are closely related.

It is not a very good plan to have ducks shipped from a distance, because they cannot endure close confinement without suffering. A duck loses weight very rapidly while being shipped.

A Pekin duck responds readily to good treatment. They appreciate plenty of food and comfortable quarters, but they should not be fed or housed with chickens, nor in fact, with any other fowls, for they are very timid creatures and should be kept as quiet as possible.

Besides this, it is not advisable to feed ducks with other poultry.

A ration that is all right for ducks may be all wrong for chickens, and vice versa. For instance; whole grain is not as good for ducks as a mixture of ground grains and cooked vegetables.

Whole corn may be fed occasionally, but it should be soaked for several hours before feeding.

Dry oats and wheat make very poor duck feed, but both are good when cooked and mixed with corn-meal or boiled potatoes and bran.

It hardly pays to feed wheat to ducks unless it is unsalable. Since thorough cooking renders musty grain harmless it may be fed to ducks with good results. When cooked potatoes are used they should not be mixed with the ground grain until after the latter has been thoroughly moistened with either milk or water.

If the dry meal is added to the mashed potatoes a tough, sticky mass will be the result. Don't make the feed sloppy; just moist enough to cling together without being gummy. A duck cannot eat gummy feed without wasting it.

Other vegetables such as turnips, beets, rutabagas, etc., are sometimes used instead of potatoes. Pumpkins, when thoroughly cooked, make a very good basis for the mash. The seeds should always be removed.

When no vegetables are to be had we use equal parts of boiled oats, corn-meal, wheat bran, and middlings or second flour with a little powdered charcoal added. Salt is added to the feed twice a week. Some people (who ought to know better) put sand and oyster shell in the duck feed. When this is done the ducks are often forced to consume more grit than they require.

Of course ducks must have plenty of grit at all times, but it should not be mixed with the food. We place shallow boxes of grit close to the feed troughs. Oyster shell and coal cinders in some of the boxes, and clean, coarse sand in others.

Ducks will eat grit after every meal if it is within reach.

They usually drink and rinse their beaks while eating, therefor water should be placed near the feed troughs. Also green food is necessary the year round. Some sort of green stuff should be given at least once a day in winter.

If cabbage is plentiful, a little may be added to the mash each time. It should be chopped raw. As bulk is one of the important elements in a Pekin duck's ration, it is a good plan to provide an abundance of green stuff. We usually sow a patch of rye early in the fall for winter and early spring use.

A well-fed and properly housed Pekin duck usually lays an egg every twenty-four hours during the laying season which begins about March first, and ends about July first. During this time they will sometimes take a short rest, and will miss a day occasionally, but they seldom stop for any length of time during the laying season. The first few eggs will not hatch as a rule.

Ducks, both old and young, should have a dry, comfortable place to stay in at night. If forced to sit on the damp ground they are liable to take cramps and cold in the head. The latter is almost certain to turn to roup.

Provide suitable houses if you wish to be successful. The houses need not be very expensive, but they should be substantial so that they may be used for the same purpose several years in succession.

A board floor is better than an earth floor, because the ducks will often stir up the ground in a very disagreeable manner where there is the least sign of moisture.

Provide plenty of clean bedding, and change it frequently. Straw or litter should be kept on the floors all the time. If bedding material is plentiful put it on several inches thick. It will help to keep the ducks comfortable, and also keep the floors clean, thus serving a double purpose. Never pick ducks during the laying season.

Ducks' eggs may be hatched in incubators, but it is better to use large chicken hens when possible.

Don't keep duck eggs over a week after they are laid. The fresher they are the better they will hatch.

After a Pekin duck egg is ten days old, it is entirely worthless so far as hatching is concerned. They should be very carefully handled, as the albumen is much thinner than that of other eggs.

As soon as the eggs are laid, if not placed at once for hatching, they should be carefully wrapped in paper and turned every day. They should be kept where the temperature is neither too high nor too low—about 50 to 65 degrees F. Don't keep eggs

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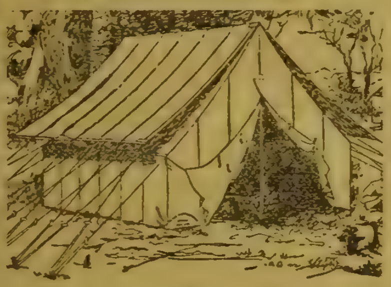

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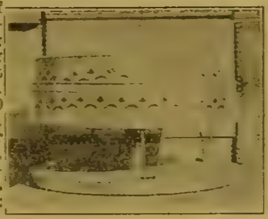

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intended for hatching in a damp cellar.

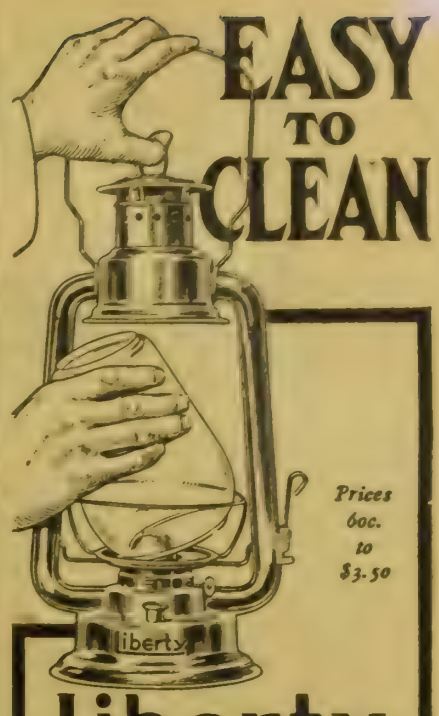
When ducks are laying, their appetite increase, but one must be careful not to overfeed. If their food is not too highly concentrated, and there is plenty of coarse grit and sand within reach, there is little danger of overfeeding. Three or four square meals a day will not hurt a laying duck. When overfed they lay double-yolked eggs.

Never give ducks buttermilk, or in fact, any other kind of milk, to drink. It may be used to moisten their feed, however. Buttermilk, skim milk and "clabber" are all valuable in duck feeding, but they should be used only for moistening the feed, and not as a drink.

Don't keep over five ducks for each drake.—Farm World.

WHAT IS A BALANCED RATION?

The question is often asked of me as to what constitutes a balanced ration. Some will say what is the need of feeding a balanced ration for if a hen is going to lay at all she will do so with ordinary feed without going to the trouble of figuring out and mixing a ration that will balance. In the first place I would say that a balanced ration is such a mixture of grains and feeds as will bring the per cent of protein in relation to a certain proportion of carbohydrates. Of course all feed as we know it, consists of protein or flesh and egg producing elements and carbohydrates or heat and fat producing elements, besides ash, water, indigestible fibre, etc. The protein and carbohydrates are the only ones that are necessary to consider in the question of a balanced ration. Most grains are too rich in carbohydrates. Thus when fed without the addition of some higher protein feed such as beef scraps, etc., we find that we are feeding too much fat producing elements and consequently our hens are liable to become too fat for the best egg production. To get the best results we find that it becomes necessary to add some beef scraps or other such protein feeds in order to bring the per cent of protein and carbohydrates in such proportion to each other as will keep the hens in the best condition for producing eggs and yet at the same time keep them from getting too fat. In order to get at this we must know the analysis of every feed that we are using and then figure out a ration that will meet our needs. Space here would not permit me to give the analysis of all the different feeds that poultry breeders use nor to give directions for figuring out rations. It of course requires quite a lot of study and figuring to arrange a good ration. If one desires to get the best possible results from his poultry, it becomes necessary for him to use every advantage for bringing his success. I believe that a balanced ration is almost a necessary part of the work. Of course good results may come by guessing at a suitable ration, but in that way there would be a chance for one to guess at something that would prove to be far from what is best. Thus if one is to feed high-priced feeds he would naturally want to feed them in proper proportions so as to get the best results. Many are keeping poultry who do not understand anything at all about a balanced ration and yet they get good results. Why? Because they have mixed their feeds so as to give their fowls a variety and in such proportions as are not too far from what we consider a perfectly proportioned ration. Others may make great mistakes in their feeding simply because they have been giving their grains and feeds far from what is correct. If we are going to go on feeding our poultry in a hit-or-miss style, what is to come of the work of our experiment stations who are working out these problems for us? If there is nothing to be gained by properly balancing up our poultry rations, then I do not understand feeding poultry. I say that I believe that the nearer we feed to a balanced ration just so may we have better chances for the best results.—Poultry Advocate.



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Queries and Replies

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Eradicating Squirrels.

Please give the latest and most successful methods of killing squirrels. We have quite an extensive planting of young citrus trees on an old grain ranch and are having considerable trouble. We have killed a good many using strychnine on pieces of watermelon.—J. A. R, Corona.

Barley (whole grain) 20 pounds, strychnine sulphate (pulverized) 1 ounce, saccharine 1 teaspoon, (scant) gloss starch solution, (medium thick) 1 pint. Boil one-quarter cup of gloss starch in water to make a pint of medium thick solution. While hot, stir in the strychnine sulphate and the saccharine and mix well for several minutes. Slowly pour the poisoned starch over the grain, mixing constantly until the kernels are evenly coated with the poison. The best results are obtained by distributing the poison early in the morning or late in the afternoon.

Planting Umbrella Trees.

How far apart ought Umbrella trees to be for roadside planting? Would they be apt to blow over when they become grown? If this should be the case, could it be prevented by pruning? The location for these trees is in the Turlock district and the soil is a sandy loam.—Subscriber, Oakland.

Umbrellas in the San Joaquin Valley, where the tree luxuriates at its best, are planted from thirty to forty feet apart. If properly planted in a soil of suitable depth, there is little danger of their blowing over when once well established. Beyond trimming up to a suitable length for the purpose little if any pruning is advisable.

Sorts of Citrus Fruits.

Will you kindly through your columns give me the following information, which is the most profitable variety of orange, grape fruit, and lemon to propagate, the monetary value of same, on the markets, and any other information in relation thereto.—Isthmus Fruit Co.

The two chief varieties of orange for commercial planting in California are the Washington Navels and the Valencia Late; in lemons the Eureka Supreme, and in pomelos (Grape Fruit) Marsh's Seedless is popular. For detailed information on the whole subject of citrus fruits, send 25 cents to R. M. Teague, San Dimas, Cal., for a copy of his booklet, "The Citrus Fruits: Historically, Horticulturally and Commercially."

Ailing Palms.

I have an avenue of palms three years old and this summer two of them have died. I have been giving them plenty of water. I dug them up thinking that perhaps it was a gopher, but can find no signs of one as the roots and heart of the tree are in good condition. The palms seemed to be all right and in two days they had wilted down. The palms were not close to each other, nor did they die at the same time. Can you tell me what the trouble is and a remedy?—Subscriber, Exeter.

This inquiry has been submitted to several plant sharps without a solution of the trouble. If the root and heart of the plant is absolutely healthy, there can be no excuse for the palms failing to grow. We suggest a more careful examination, and suggest to our correspondent that he consult his best local nurseryman by asking that he inspect the plants.

Alfalfa Meal.

Can you inform me to whom I could write in reference to machinery for making alfalfa meal for stock. Also where there are any alfalfa mills located in this section. Your answer will greatly oblige.—J. M. D., Riverside.

Any one of the following handle this machinery: Arnott & Co., Newell Mathews Co., and Hawley, King & Co., all of Los Angeles. There are alfalfa meal mills at El Centro and at Stockton.

Grape and Apple Vinegar.

Will you kindly give through the columns of your valuable paper a recipe for making apple cider vinegar and also the making of vinegar from grapes? Would like detailed instructions.—"Amateur," Morgan Hill.

To change grape juice into vinegar it is necessary to ferment it as completely as possible. This may be accomplished by adding strongly fermenting grape-must to the juice. When the fermentation has come to a standstill the fermented juice should be inoculated with vinegar bacteria. In order to prepare a starter of these bacteria proceed as follows: Take one-half pint of a good wine. Dilute it with about one-third this quantity of boiled water. Place it in a flat porcelain dish and cover with a plate to keep out the light, in such a way as to allow free access of air. Place the dish containing the diluted wine at an even temperature of about 18 degrees, centigrade, (64 degrees Fahrenheit. In two to three days the surface of the liquid will be covered with a film of the vinegar bacteria and it will have a pleasant strong smell of vinegar. Sufficient starter for the inoculation of about 200 liters (50 gallons) of wine will be obtained in this way. The starter should be added to the wine, which is placed in puncheons. The bungholes are left open, and the puncheons filled to about two-thirds of their capacity. If the wine is kept at a moderately warm and even temperature the vinegar will be ready in from two to three months. If the temperature is cold and uneven if will take longer.

The same procedure also applies in the making of apple cider vinegar.

Hogs and Alfalfa.

Have something like thirty acres of alfalfa, worth at present time $8 to $9 per ton in the field (loose) with prospects of its being cheaper another year. 1. Would it not be more profitable to feed to hogs (feed or pasture, which)? 2. What are most profitable or best kinds? 3. How many head will one acre support (approximately)—yield in hay 10 tons per acre per season? Have other ground to raise other products also—grain, beets, pumpkins, etc.—Subscriber, Burbank.

These questions are not easy to answer. Personally I could make more money with hogs, but then I have the foundation stock. The present prices are very high to start in a new enterprise with. Then, too, if there should come a sudden drop in

TREES

"Jock, when ye hae naething else to do, ye may be aye sticking in a tree; it will be growing, Jock, when ye're sleeping."—Sir Walter Scott, in the Heart of Midlothian.

The rainy season has begun and with it comes the thought of tree planting.

Every prospective planter of trees or vines should have

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price the increase in numbers may be wiped out by the shrinkage in value. The commercial side plays quite a figure in the matter as one cannot possibly eat all he raises himself. This land should carry by the year readily eight sows to the acre if the pigs are sold off at fifty pounds each. I would buy brood sows to start with, as good as I could get, but would not be particular as to breeds and start in with one man to care for them. As soon as the pigs are dropped each sow should have a separate place for a week or so until the pigs know their mother perfectly. One source of loss is in buying pigs or sows from unknown people. The danger of disease is very great and when it once takes hold of a bunch they nearly all go. One man can look after quite a number of hogs if he has nothing to do but care for them. Any of the breeds are profitable enough to make them worth trying. In California, however, we avoid the white pigs as more subject to mange than the darker breeds. We use pigs as a side issue and feed them skim milk, melons, pumpkins and cull vegetables. We keep ten to fifteen sows and they are dropping their litters during April and May and then again in September and October. So far we have averaged ten pigs to a litter from six sows, eleven pigs from two sows and twelve from two sows. The rest of the bunch have not as yet arrived. Last spring we fell down a little and had about eight to a sow. The fall bunches are always larger. We do not expect that the rest of the sows will give us as many pigs for it would make it a banner year.—M. E. S.

Potatoes Not Blooming.

Regarding potatoes here, the plants do not bloom evenly and some not at all. Is there any variety that has a stronger tendency to bloom than others, or does it make much difference?—L. E. A., Hemet.

The improved sorts of potatoes have been bred so closely for tubers rather than seed production, that the flowering proclivities have been almost entirely eliminated. As a matter of fact non-flowering is an advantage.

Grafting Black Walnuts.

I have some trees of the native black walnuts, Juglans Californica. Is it possible to cut these trees back and graft English walnuts on them? If it is done, will they produce first-class nuts?—F. W. P., Altadena.

Nurserymen are using the native black stock and as a rule orchardists prefer it to any other, though it is not used exclusively. Your large trees may be cut and grafted at the proper season, i.e., when they are dormant, preferably a short time before growth starts in the early spring.

Green Manuring.

What form of green manuring should I use on sandy soil near Redlands for orange planting? Would alfalfa make sufficient growth from the winter rains? Will alfalfa lie dormant after rains are over or will it die?—Subscriber, Redlands.

We cannot determine from the question whether the inquirer wishes to prepare ground before setting his trees or whether he wishes to set them next spring. If they are to be set at that time we would prefer vetch. It makes probably the best winter growth and the best results with it are gained by irrigation. Alfalfa is very desirable as a green manure crop if it can be allowed to stand until the roots go to some depth. When plowed under the aeration of the soil is beneficial as

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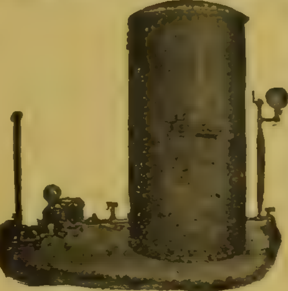

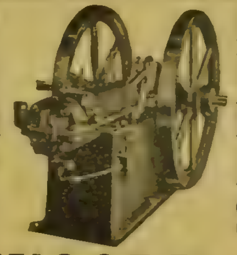

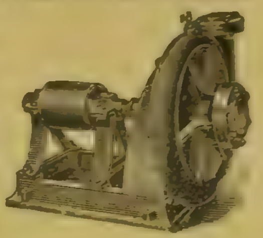

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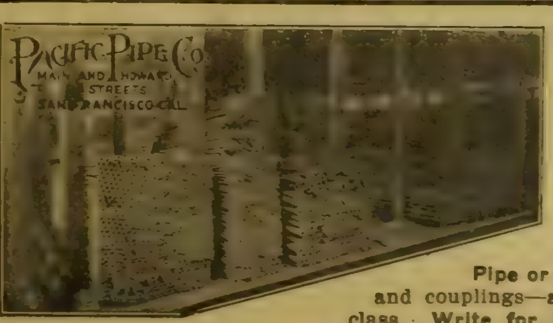

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well as the green stuff actually plowed under. By "lying dorman after the rain" we understand the inquirer wishes to know if it mai tains its green growth during th summer. With reasonably moist soi it will do so. Green manuring accomplishes best results always when irrigation may be practiced.

White Rabbits.

Where may I obtain white rabbits —L. D. Hanford.

This query we will pass to our subscribers as we do not know of anyon who has made the breeding of thes pets a business. Doubtless there [illegible] many in the state who can suppl our Kings county subscriber.

White Scale.

We have from subscriber at S Ana box containing orange l and small branches badly inf with white scale or cottony cus scale (Icerya purchasi). While letter accompanied the request assume the inquirer wishes to kno treatment and would recommend h writing to State Commissioner Je frey at Sacramento for colony Novius cardinalis.

Experiment with Arabian Alfalfa.

Last March I received seed of Ar bian alfalfa from the Department Washington, distributed for expe mental purposes. This was planted once and on September 3rd I ma the fourth cutting. During the su mer I cut as much from this recent seeded plat as from a year-old fie of the ordinary, or Chilean, variet but at this writing, September 28 the Arabian is far outdistancing t Chilean. I expect to make the fi cutting next week.—J. W. Anders El Monte.

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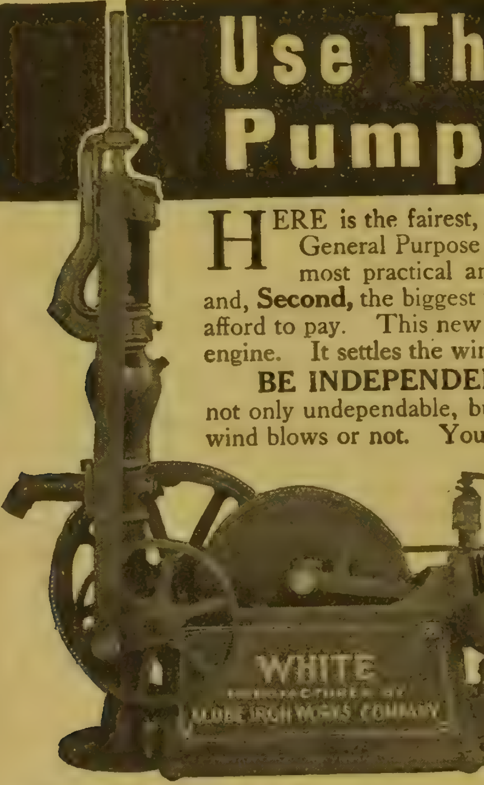

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But not only is this engine the perfect pump engine—it's more than that, it's a "man of all work"—a regular giant for work and wear. Though built particularly to fill the big demand for an absolutely reliable pump engine, it is adapted for runing any kind of machinery requiring moderate power So simple anyone can run it—even a ten-year-old boy. Will run constantly, day and night. Never gets overheated or misses a stroke. Requires no attention while running. It's self-oiled, self-fed, self-regulated in every way. A real 4-cycle engine—mind you, not a cheap 2-cycle style. It's a marvel of simplicity, durability and power. Adapted for every purpose.

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Business Notes

RICH LANDS.

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The Cotton Land Company, an Arizona corporation, is now placing on the market and opening up for sale a large tract of land on the Colorado River opposite the town of Needles. This tract is composed of a rich silt soil of sedimentary origin and is irrigated by a gravity system owned by the Cotton Water & Irrigation Company, a mutual company, stock of which goes with the land.

The natural advantages of Cotton Rancho, situated as it is on the Banks of the Colorado River close to the main line of the Santa Fe makes it an ideal place to raise alfalfa, cotton and other products. There being no other agricultural lands for hundreds miles along the Santa Fe, Cotton ncho has a high priced market its products.

e tract is offered for sale by W. Hollingsworth & Company 123 6th street, Los Angeles, Cal.

e Layne & Bowler Co. of Califor- 2116 Violet St., Los Angeles, re- t that they are unusually busy both the field with their rotary and in applying their patented Layne screen for water wells, patented centrifugal pumps, steel pit, etc. They are now completing the second 1700 foot well for Stoddard Jess in San Joaquin Valley.

MACHINERY.

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For Sale—White Orpingtons, best utility stock. Birds guaranteed not to be related. Vallejo Poultry Yards, 208 Frisbie St., Vallejo, Cal.

For Sale—Several young thoroughbred bronze turkey toms for breeding. J. F. Thwing, R. F. D. 5, Box 81, Washington Park, Verdugo Road, Los Angeles.

Single Comb Brown Leghorn Eggs—$5.00 per hundred, $1.50 single setting. Mrs. E. Foran, Box 445, Visalia, Cal.

Poultry Wanted—We pay the highest market price for all the local poultry we can get, no matter how large the quantity; also fresh ranch eggs. We remit immediately. Allaway & Layton Co., 607 E. 3d St., Los Angeles, Cal

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Household Department

THE WOLF AT THE DOOR.

At last the good man's temper rose,
He swung his stool and deadly blows
Delivered, Smash! on snarling nose
That forced his flimsy door.

'Twas killed! He skinned it on the spot
And clapped the carcass in the pot,
Then blew the coals; when they were hot
Behind him locked the door.

Set out for town, returned with sack
Of onions, salt, white bread and black,
And, ah! the whiff, as he came back,
Of wolf stew through the door!

"I got nine rubles for his hide
And bounty on his ears, beside,
It's not a healthy place," he cried,
"For wolves before my door!"

So here's the nub; don't sit and fret;
There's bounty paid on wolf ears yet;
Pick up your stool, go out and get
That wolf before your door!

—Charlton Lawrence Edholm in Country Gentleman.

GETTING READY TO GO.

Miss Belinda's sister Catherine, and Bess, Miss Belinda's niece, were helping Miss Belinda close her country home for the winter.

"You must have that lavender silk waist made over, Belinda," said stylish Catherine, as her sister laid out her wearing apparel in preparation for packing. "It's handsome material, but it's quite out of date."

"I don't believe I'll have it altered for myself," demurred her sister. "I'd rather give it to old Brita."

"Who is old Brita?"

"Why, mother," said Bess, "don't you know old Brita? She's Aunt Belinda's pet. Last Monday afternoon, while you were driving with Uncle Ben, I actually found Aunt Belinda playing the piano to old Brita, who was folding and sprinkling the clothes. And I'm quite certain that the change of the dinner hour on Mondays is for Brita's sake."

"Now, don't laugh, Catherine, at Bessie's teasing," said Miss Belinda, laughing herself. "My laundress, Brita, is a deal little old woman who insists on earning her own living around here. She cannot stay for our usual evening dinner, because she has to go home early to milk her cow, so I have dinner at noon on Mondays, and I tell Nora to give her the best of everything. She can work so much better if she is well nourished."

"Yes, of course," agreed Catherine, smilingly, for she knew her sister's ways.

"Come, mother, this is Monday, and Brita is here," said Bess. "Let's you and I have the fun of giving her the silk blouse."

They went into the laundry, where a bent, apple-cheeked old woman looked up from a blueing tub with eyes as azure as the water into which she was dipping the snowy clothes.

"Here, Brita, is something for you," said Bess.

Brita smiled broadly and, drying her hand, offered it to Bess. "Tell Miss Belinda t'ank," she said. Then after the little handshake she held the blouse at arm's length and murmured rapturously, "Style!"

As they went back in the house Bess said, laughing: "And you, foolish mother, thought the waist out of date. Did you notiec that she said 'T'ank Miss Belinda?' She thinks Aunt Belinda is the only generous person in the world."

Two days later Nora, the cook, having departed, the three members of the household went into the kitchen to prepare their last meal of the season in the country home.

"Don't you think coffee would taste pretty good this rainy day?" asked Bess.

"Oh, I'm sorry, dear, but we can't have coffee," said Miss Belinda. "I gave the few pounds that were left to Sammy Nelson this morning when he was helping me dig up my dahlia roots. His mother is not well and I thought some good coffee might help her."

"Well, I can make chocolate," said Bess.

"No, we can't have chocolate." Miss Belinda looked a little embarrassed. "I let Sammy have the last cake of chocolate. The poor little chap doesn't have much candy."

"I suppose there's no tea, either?" remarked Bess, in mock despair. "You doubtless gave that away, too?"

"Yes, but I saved enough out for lunch," answered Miss eBlinda brightly.

"I can make some hot biscuits to eat with the tea," said Catherine, rolling up her sleeves.

"Oh, I'm sorry I didn't realize that you'd be enterprising enough to want to make biscuits," apologized Miss Belinda, laughing. "I told Norah to take the flour and the baking powder to her grandmother with the tea and some preserves. But we have some crackers and fruit."

"Delicious luncheon—tea, crackers and grapes!" laughed Bess. "And you needn't bother to tell us, Aunt Belinda, dear, how unwise it is to leave provisions in the house and how you gave them away merely out of selfishness. We know all about that."

"You are a very saucy young person," retorted Miss Belinda, looking fondly at Bess. "Why, there comes old Brita through this storm. Bless her old heart, she wouldn't let me go away without saying 'Good-by.'" Miss Belinda opened the kitchen door as she spoke. "Come right in, Brita. You're just in time for some hot tea."

"T'anks; I bring present this time," said Brita, proudly opening the well-wrapped box she was carrying and displaying a large white cake. "I have mak' for Miss Belinda angel work."

"Angel work! Look, Catherine and Bess." Miss Belinda turned from the old, happily shining eyes to her sister and niece.

Angel work, indeed," murmured Bess.—Universal Magazine.

MEAT PIES AND SIMILAR DISHES.

Meat pies represent another method of combining flour with meat. They are ordinarily baked in a fairly deep dish the sides of which may or may not be lined with dough. The cooked meat, cut into small pieces, is put into the dish, sometimes with small pieces of vegetables, a gravy is poured over the meat, the dish is covered with a layer of dough, and then baked. Most commonly the dough is like that used for soda or cream-of-tartar biscuit, but sometimes shortened pastry dough, such as is made for pies, is used. This is especially the case in the fancy individual dishes usually called patties. Occasionally the pie is covered with a potato crust in which case the meat is put directly into the dish without lining the latter. Stewed beef, veal, and chicken are probably most frequently used in pies, but any kind of meat may be used, or several kinds in combination. Pork pies are favorite dishes in many rural regions, especially at hog-killing time, and when well made are excellent.

If pies are made from raw meat and vegetables longer cooking is needed than otherwise, and in such cases it is well to cover the dish with a plate, cook until the pie is nearly done, then remove the plate, add the crust, and return to the oven until the crust is lightly browned. Many cooks insist on piercing holes in the top crust of a meat pie directly it is taken from the oven.

Twelve O'clock Pie.

This is made with shoulder of mutton boiled with carrot and onion, then cut up, mixed with potatoes separately boiled and cut up, and put into a baking dish. The crust is made by mixing smoothly mashed potatoes to which a tablespoon of shortening has been added, with enough flour and water to make them roll out easily. A pie made of a pound of meat will require 5 or 6 small boiled potatoes, a cup of mashed potatoes, and 8 or 10 tablespoons of flour, and should be baked about twenty minutes in a hot oven. Salt, pepper, and other seasoning, as onion and carrot, may be added to taste. A teaspoon of baking powder makes the crust lighter.

Meat and Tomato Pie.

This dish presents an excellent way of using up small quantities of either cold beef or cold mutton. If fresh tomatoes are used, peel and slice them; if canned, drain off the liquid. Place a layer of tomato in a baking dish, then a layer of sliced meat, and over the two dredge flour, pepper, and salt; repeat until the dish is nearly full, then put in an extra layer of tomato and cover the whole with a layer of pastry or of bread or cracker crumbs. When the quantity of meat is small, it may be "helped out" by boiled potatoes or other suitable vegetables. A few oysters or mushrooms improve the flavor, especially when beef is used. The pie will need to be baked from half an hour to an hour according to its size and the heat of the oven.

Meat and Pastry Rolls.

Small quantities of cold ham, chicken, or other meat may be utilized for these. The meat should be chopped fine, well seasoned, mixed with enough savory fat or butter to make it "shape," and formed into rolls about the size of a finger. A short dough (made, say, of a pint of flour, 2 tablespoons of lard, 1 teaspoon of baking powder, salt, and milk enough to mix) should be rolled thin, cut into strips, and folded about the meat rolls, care being taken to keep the shape regular. The rolls should be baked in a quick oven until they are a delicate brown color and served hot.

Meat Turnovers.

Almost any kind of chopped meat may be used in these, and if the quantity on hand is small may be mixed with potato or cooked rice. This filling should be seasoned to taste with salt and pepper, onion, or whatever is relished, and laid on pieces of short biscuit dough rolled thin and cut into circles about the size of an ordinary saucer. The edges of the dough should be moistened with white of egg, the dough then folded over the meat, and its edges pinched closely together. If desired, the tops of the turnovers may be brushed over with yolk of egg before they are placed in the oven. About half an hour's baking in a hot oven is required. Serving with a brown sauce increases the flavor and moistens the crust.—Bul. 391, U. S. Dept. Ag.

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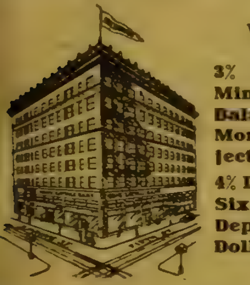

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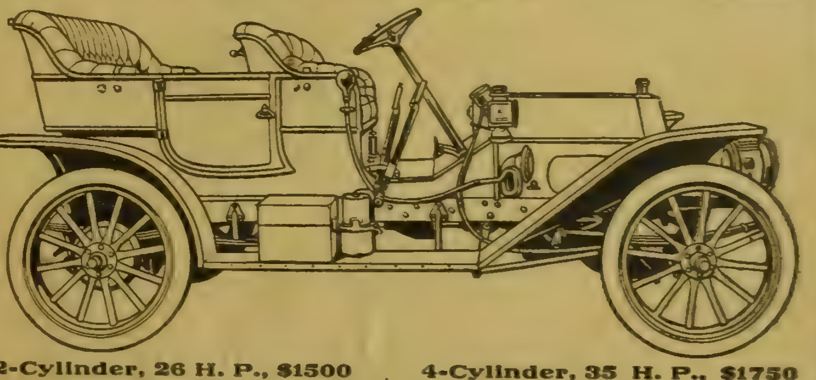

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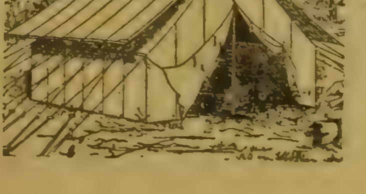

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San Francisco and Los Angeles Produce Markets

Los Angeles Markets

LOS ANGELES, Oct. 26, 1910.

Butter

Receipts of butter are light, only 36,000 pounds coming in on Tuesday, yet quotations remain exactly as last week with firm market.

Price to trade 2½c in advance of the following Produce Exchange Quotations:

Extras	.35
Firsts	.32½
Cooking	.25

Cheese.

Local	.18
Northern fresh	18½@19
Oregon Daisy	18½@19
Imported Swiss	.32
Domestic Swiss	22@24

Eggs and Poultry.

With very light receipts of eggs market is still advancing and is very firm. Quotations are about one cent above those of last week.

Paying price f. o. b.. L. A. is:

Local ranch candled	.47
Case count buying price	.43
Eastern fresh	.35
Eastern Storage	.32
Seconds	.27

Dealers pay for live poultry f. o. b. L. A.:

Hens, per lb.	.17
Roosters	.10
Spring	20@23
Turkeys	22@26
Ducks	.16
Geese	.11
Squabs per doz.	1.50

Live Stock.

The following quotations are f. o. b. Los Angeles, on all stock:

Hogs, 175 to 200 lbs.	9.25
Prime Steers	.5
Heifers	4@4½
Calves, per lb.	.6½
Sheep, ewes, per head, shorn	5.00
Lambs, per head	3.75@4.25
Wethers, shorn	5.00

Potatoes.

Wholesale prices are:

Highlands	1.15@1.35
Sweets, Yellow, per ctl.	2.00

Onions.

Wholesale quotations:

Australian Browns	1.50
Yellow Danvers	1.50
Garlic	.7½

Vegetables.

Wholesale quotations:

Artichokes, northern, doz	1.00
Beets, sack	.90
Beans, green	.4½
Brussels Sprouts	.10
Beans, Limas	.4
Bell Peppers, lb.	.6
Green Chilis	.5
Chili's, Dried	.25
Cucumbers, per lug	.50
Cabbage, per sack	.85
Celery crate	2.50
Cauliflower, crate	1.50
Carrots, per sack	.90
Egg Plant, per lb.	.5
Green Corn, box	55@60
Green Onions, per doz. bunches	.20
Lettuce common, per crate	1.50
Leeks, per doz.	.40
Okra, lb.	2@8
Peas, per lb.	.6½
Parsley, per doz. bunches	.25
Parsnips, doz. bunches	.25
Pumpkins, lb	1@1½
Radishes, per doz. bunches	15@20
Rhubarb, local	75@1.10
Spearmint, doz bunches	30@35
Spinach, per doz.	.20
Hubbard Squash, lb.	.2
Summer Squash	.40
Tomatoes, lug	.50
Turnips, sack	1.00
Water Cress, doz. bunches	25@35

Citrus Fruits.

Valencias	4.00
Grapefruit	2.75@3.75
Lemons	4.50@5.00

Fresh Fruits.

Wholesale prices on the market are:

Alligator Pears	3.50@4.50
Apples Bellflower	90@1.10
Spitzenbergs	1.50
Jonathans Utah	2.25
Greenings	1.25
Pearmains	100@1.25
Fall Pippins	75@1.00
Pineapples	6@7
Casabas, doz	1.50
Figs, box	1.00
Grapes, lug	1.25@1.50
Grapes Tokays	1.35@1.50
Pears, lb.	.6
Bartletts	2.50
Strawberries	.8
Raspberries	.8
Blackberries	.10
Peaches, clings, box	1.25
Plums, crate	1.50
Quinces, lb.	.5
Watermelons, lb.	.2

Dried Fruits.

Wholesale prices are:

Apricots	11½@12
Evap. apples, fy., per lb.	8@8½
Figs, pound bricks	.8½
Peaches	6@7
Pears	10@11
Nectarines	.10
Prunes	7@11
Plums	.10

Beans Dried.

Wholesale quotations:

Limas	5.00
Black eyes	5.00
Pinks	6@6.50
Lady Washington	4.25@4.50
Small white	4.25@4.50
Garvanzas	4.00@4.50
Lentils	6.00

Nuts.

Wholesale quotations are:

No. 1 soft shell walnuts	16½@18½
No. 1 H. S.	.14
No. 2, all kinds	.11

Grafted or budded an advance of 2½c.

Brazil nuts	.14
Filberts	.14
Almonds, IXL, per lb.	16@17
Pecans polished	14@16
Peanuts Eastern	.7½
Peanuts, Cal.	.6½

Honey.

Wholesale quotations:

Extracted water white	.9
Extracted light amber	.8
Comb W. W.	.18
Light amber	.13
Beeswax	.30

Hay.

Buying prices f. o. b. cars L. A. are:

Barley hay	10.00@13.00
Wheat hay	10.00@13.00
Tame oat	12.50@14.00
Alfalfa	10.00@11.00

Grain.

Wholesale selling price f. o. b. Los Angeles:

Wheat, new, per ctl.	1.80@1.85
Corn	1.65
Popcorn	3.50
Kaffir corn	1.75
Egyptian corn	1.85
White oats	1.85
Seed Rye	2.00
Seed Barley	1.30

Feed Stuff

Wholesale selling price f. o. b., Los Angeles:

Cracked Corn	1.70
Cracked Wheat	1.95
Shorts	1.80
Bran	1.55
Oil cake meal	2.50
Feed Meal	1.75
Rolled Barley	1.15

San Francisco Markets

SAN FRANCISCO, Oct. 25, 1910.

Butter.

Owing to very heavy receipts and large supply extras are much lower. The decline began last week, Saturday showing another drop. Quotations are now 3 cents under last week's.

The official quotations of the San Francisco Wholesale Dairy Produce Exchange for today are as follows:

California extras, per lb.	.32½
California firsts	.30
California seconds	.29
Storage	.30½

Cheese.

California flats, new	13@17
Cal. Young Amer. fy. new	15½@17
Oregon, Fancy	.16½

Eggs and Poultry.

Eggs are in keenest demand and a material advance is noted. A very firm condition prevails.

Official quotations of the S. F. Wholesale Dairy and Produce Ex. are:

Fresh ranch extras	.48
Firsts	.42
Seconds	.30
Storage	.30½

Hens, per dozen	5.00@10.00
Roosters, per doz.	5.00@8.50
Fryers, per doz.	5.00@6.00
Ducks	6.00@10.00
Broilers	3.00@4.00
Spring Turkeys	25@28
Geese	2.00@3.00
Goslings, pr.	2.00@3.00
Pigeons	1.50@2.25
Squabs	2.50@3.00

Live Stock.

San Francisco prices gross weight:

Steers	4@5½
Cows and heifers	3¼@4½
Hogs	6@9½
Calves, per lb.	4½@6
Milk Lambs, Unshorn	6@6¼
Wethers No. 1	.4½
Ewes No. 1	4@4¼

Potatoes.

Wholesale market quotations:

River White, new box	70@95
Salinas Burbanks	1.45@1.60
Sweets, ctl.	1.90@2.00

Vegetables.

Wholesale quotations:

Artichokes	25@40
Beans, string, per lb.	3@4
Beans, Lima, lb.	4@5
Cucumbers, box	50@65
Celery, per crate	50@75
Chili Peppers per box	25@40
Bell Peppers	6@7
Green Corn, sk	75@1.25
Egg Plant, box	25@40
Lettuce, per crate	4.50@5.00
Okra, box	25@40
Peas, per lb.	3@5
Summer Squash, box 25 lbs.	75@90
Tomatoes	25@50
Garlic	2½@3

Onions.

Onions, sk., Cal.	90@1.05
Onions, Oregon	1.15@1.35

Citrus Fruits.

Valencias	3.00@4.50
Grapefruit	2.00@4.00
Lemons	3.00@6.00
Limes	6.50@7.00

Fresh Fruits.

Apples, box	50@85
Apples, Bellflowers	90@1.00
Bananas, Hawaiian	75@1.20
Cranberries, Coos Bay	2.50@3.50
Cantaloupes	2.00@2.50
Nutmegs	1.25@1.50
Figs, box single	65@1.00
Grapes, seedless	60@75
Grapes, Tokays	50@60
Grapes, wine ton	8.00@16.00
Huckleberries, lb	6@8
Pears, Winters	50@85
Bartletts, wrapped	1.00@1.50
Peaches, lugs	1.25@1.50
Persimmons, box	75@1.00
Quinces, box	85@1.00
Pomegranates, box	50@1.00
Plums, crate	90@1.15
Raspberries, chst.	4.00@6.00
Strawberries, chst	3.00@5.00
Pineapples, doz.	2.00@3.00
Watermelons, per doz.	1.50@3.00

Dried Fruits.

Market is quiet and general tone not at all strong.

1910 crop, f. o. b., carload lots, per lb: Apples, 7@8¼c; Apricots, 10½@13c; do Moorparks, 14c; Peaches, 5¼@7c, with a premium of ⅛@¼c on Muirs; Prunes, Santa Claras, 5½c with ½@¾c premium on 40s; outsides 5¼@5⅜c; Figs, 4¾@6½c for White and 4¼@4½ for Black; Pears, 9¾@13c.

RAISINS—1910 crop: London Layers, in 20-lb. bxs: 6-crown clusters, $2.25@2.50; do, 5-crown, $1.75@2.00; do 4-crown, 1.40@1.50; 3-crown lawers, $1.25@1.30; do, 2-crown, $1.15@1.20. Seeded, per pkg.—Fancy, No. 16 5¾ 6c; Choice, No. 16, 5¼@5½. Loose Muscatels in 50-lb. bxs—Standard, 4-crown, 5½; do 3-crown, 4½@4¾c; do 2-crown, 4@4¼c. Dried Grapes, 3c. Seedless—Muscatels, 3½c; Sultanas, 4½c; Thompsons, 5c.

Nuts.

Walnuts, No. 1 soft shell	.15
Walnuts, No. 1 hard shell	.14½
Almonds, '10 N. P. U.	.13
Almonds, 10 Nonp.	.15
Almonds, '10 I X L	.14
Almonds, Peerless	.12
Pecans	14@15
Chestnuts	6@8

Beans Dried.

Limas	4.75@4.85
Pink	5.10@5.15
Black eyes	5.50@5.65
Small white	3.80@3.85
Large White	3.80@3.85
Kidneys	5.25@5.50
Garvanzas	3.25
Bayo	4.95
Horse beans	2.00
Red Mexicans	5.25@5.50
Cranberry	4.50@4.75

Hops

Hops, 1910 crop	12@16
Hops, 1909 crop	10@15

Honey.

W. W. Comb '10	.15
Dark Comb	.12½
Extracted W. W.	.8
Extracted, dark	.6½
Beeswax, per lb.	24@30

Hay.

Scott, Magner & Miller say:

Arrivals of hay for the past six days have been 4200 tons, being just about the same amount that came into the market for the preceding week. We still continue to experience difficulties in obtaining sufficient cars from the railroad companies for the transportation of hay at various hay centers, and this fact has caused considerable difficulty lately.

Market prices have continued unchanged. With the exception of something strictly first-class the market is rather dull ,as other grades of hay do not move off well.

The orders that have come into this market for exporting and for coastwise shipments have been the leading features of the market lately, as it has been exceptionally good and large quantities of hay have been sent forward steadily from day to day to supply this desirable trade.

While a little purchasing is being steadily done in the country to simply supply the daily current requirements of our markets, no operations of any moment are reported from any section.

Alfalfa continues to arrive steadily in large quantities and is absorbed on orders held here to be filled, and for general local trade. This article is decidedly firm all along the line.

We quote the wholesale prices in round lots on today's market as follows, viz.:

Fancy wheat	12.50@13.50
No. 1 wheat or wh and o	10.50@11.50
No. 2 wheat or wh and o	9.00@10.00
Choice tame oat	10.50@11.50
Other tame oat	8.00@9.50
Wild oat	8.00@9.00
Stock hay	5.50@6.50
Alfalfa	9.00@12.00
Straw	40@50

Grain.

Wheat, No. 1	1.47½@1.55
Barley, good to choice	96¼@98¾
Barley, fancy	1.00@1:01¼
Barley, poor to fair	90@95
Oats white	1.47½@1.55
Rye, new crop	1.50@1.55
Alfalfa seed	14@15
Mustard brown	.4½
Millet	.2¾
Flaxseed	5@5½
Broom corn seed, per ton	23.50

Feed Stuff.

Bran, per ton	29.00@31.00
Feed cornmeal, per ton	36.00@37.00
Cracked corn	36.00@37.00
Ground barley, per ton	22.00@23.00
Rolled oats, per ton	29.00@31.00
Middlings	34.00@36.00
Oil cake, per ton	40.00@41.50
Cocoanut cake, per ton	25.00
Mixed feed, per ton	24.00@27.00
Shorts	30.00@32.00

Deciduous Market

SACRAMENTO, October 22, 1910.

The following circular of the California Fruit Distributors gives number of cars of deciduous fruit shipped from all points in California for the week (7 days) ending Friday morning, October 21st, 1910:

Pears.—Four cars:

There have been no pear shipments during the past two days and movement is practically done.

Grapes— 196 cars:

Shipment of this fruit shows a falling off from last week of nearly 200 cars. Tokays are now nearly done. There are a few more straight cars of Tokays available, but in common with Cornichons and Emperors they can be offered for a few days in mixed cars. Emperors are available in straight carload lots and possibly a few Cornichons also.

Weather conditions have remained favorable during the past seven days and the prospects are now good for a continuation of same. Fruit is showing practically no effect at this end of the line from the unfavorable conditions that existed previous to last week.

Citrus Market

LOS ANGELES, Oct. 26, 1910.

No material change is to be noted in the orange market other than if anything a stronger feeling prevails. The few Valencias yet to go are of good quality and without question will command best of returns. Tulare and Fresno counties are shipping new crop Navels, but these have not reached the market yet, so that the reception to be given to them cannot be forecasted, Floridas have been a strong factor and it is presumed now that windfalls from the recent hurricane will fill the markets with low grade green fruit. For that reason California shippers may well allow Navels to hang on the trees for more perfect ripening. Some estimate that the damaged Florida fruit will be as great as twenty per cent, but in any case it will exceed ten.

A flurry in lemons has given the most sensational price of the year. It was caused by shortage in both Californias and foreigns and some prices as high as $12.00 were commanded in New York and other markets. $7.00 and $8.00 were common prices in all parts of the country. These exceptional prices are already tumbling because of the more liberal shipping of the new fall cut. This is true, not only of the California orchards, but the Mediterranean is beginning its fall cut.

Shipments.

Shipments of citrus fruit to date since November 1, 1909; 29,980 cars of which 25,256 were oranges and 4724 lemons. To same date last season: 37,871 cars, of which 31,741 were oranges and 6130 lemons.

NEW YORK, Monday, Oct. 24.—The offerings today comprised thirteen cars Valencias and one car lemons. Under what might be termed, at this stage of the game, a heavy offering, coupled with the fact that a large portion consisted of ordinary, poor colored fruit, the Valencia market, although holding steady, was prevented from making any further advances. The cool, favorable weather prevailing was much in favor of an increase in values but the liberal supply was slightly more than conditions warranted at the present time. With smaller offerings of better quality and cool weather continuing, the outlook for the rest of the week is favorable for a steady market with a possibility of values increasing over last week's record prices.

The first car of California lemons for some time past made its appearance today, and, as was expected and predicted, sold at prices that exceeded all expectations. The fruit was fancy stock and ranged $9.00 to $12.00, with the car averaging $10.85. The 300 size sold at $11.00, with 360s at $10.50, and the 270s bringing the record price of the season, $12.00.

Five hundred boxes Jamaica oranges sold today. The fruit generally was good and the market ruled strong and active. Fancy stock sold $3.45 to $4.25, averaging $3.82 for 126s and 200s and choice fruit $3.00 to $3.50, averaging $3.17 and $3.21 respectively.

here this week and the prospects for good if not unusual prices are favorable. The market is now bare of stock and the only available supply of stock is that furnished by California.

It is reported there are two or three cars of California lemons due to sell

VALENCIAS—	Avge.
Windemere Ch Randolph F Co	$5.90
National	5.45
Dulce Sd Harper F Co	4.35
Planet SS Orange	5.90
Stag ACG Ex	6.20
Pointer ACG Ex	3.65
Hunter ACG Ex	3.25
Red C Covina Ex	4.35
Cougar Covina Ex	3.60
Pointer ACG Ex	4.90
Pointer ACG Ex	4.45
Hunter ACG Ex	2.85
Golden Cross ACG Ex	5.10
Tiger SB Ex	5.20
Solano Sd Stewart F Co	3.85
Sumclass Sd Stewart F Co	2.85
Aurora Fy E Peycke Co	5.40
Luna Ch E Peycke Co.	4.20
Old Mission Fy Chapman	8.10
Old Mission Ch Chapman	7.25
Golden Eagle Sd Chapman	5.75
Slover Mtn Or Growers' F Co	2.85
Slover Mtn Ch	2.25
Orchard Or National O Co	5.85
Standard Sd National O Co	4.50

LEMONS—Selected brands, averaged $10.85.

CINCINNATI, Monday Oct. 24.—Cool. Market very strong on lemons, steady on oranges. Two cars lemons and two cars Florida oranges sold. The Florida Brights sold from $1.85 to $2.60; Russets, $1.90 to $2.40.

LEMONS—	Avge.
Mission ST Santa Barbara	$6.35
Blondine ST Santa Barbara	4.00
Loma Limoneira Co	6.50
Festival ST Santa B	6.15
Bridal Veil Limoneira Co	6.60
White Cross Limoneria Co.	6.30

PHILADELPHIA, Monday, Oct. 24.—One car Valencias sold. Also four cars Florida oranges and grapefruit. Oranges, $1.85 to $2.90; average, $2.75; grapefruit, $2.50 to $3.65; average, $3.10.

VALENCIAS—Greyhound SA Ex., $3.95.

ST. LOUIS, Monday, Oct. 24.—Cool. Market very strong on both oranges and lemons. Two cars Valencias sold.

VALENCIAS—	Avge.
Searchlight SS Orange	$4.60
SSS Brand SS Orange	3.45
Valley Beau SA Ex	5.00
SS Brand SS Orange	8.90
Volunter SA Ex	5.05
Greyhound SA Ex	4.40

BOSTON Monday, Oct. 24.—Three cars sold. Clear and cool. Market unchanged on oranges, very strong on lemons.

VALENCIAS—	Avge.
Robusta AH Pachappa	$4.80
Robusta No. 0	4.90
Orchard Or National O Co	5.35
Robusta No. 1 AH Pachappa	4.95
Hobo AH Pachappa	3.45
Standard Sd National O Co	4.35

LEMONS—Pet SA Ex., $10.10.

PITTSBURG, Monday, Oct. 24.—Cool. Market steady. One car sold.

VALENCIAS—	Avge.
Valley Beau SA Ex	$4.35
Greyhound SA Ex	3.60

CHICAGO, Monday, Oct. 24.—Lemons firm; supply small, and they are selling very well. Boxes, California choice to firm, $6.50@7.00.

Oranges steady; trade fair and supply rather light. Boxes, late Valencias, extra choice $4.25@4.50; choice, $3.25.

NEW YORK, Tuesday, Oct. 25.—Today's offering comprised five cars of Valencias. Under this moderate offering and with weather inclined to grow warmer, the market held steady and on the good grades showed prices a shade higher. A sale of 8000 boxes of Porto Rico oranges handicapped the California stock further and the probabilities are that without this handicap substantial gains would undoubtedly have been shown. The market ruled active through the sale, but the liberal offering of Porto Ricos which are cheaper and cutting excellent, had its due effect.

The Porto Rican season is well under way and from now on will be a serious competitor to California. While the fancy trade will absorb a certain amount of extra fancy Valencias at top prices, a great many buyers who were forced to buy California Valencias or take nothing to fill immediate urgent orders, will now buy the cheaper Porto Ricos, Florida, Jamaicas and Mexicans in preference. The condition of the Porto Ricos was generally good. Fancy ranged $2.50@3.50; average, $3.05, $3.18, $2.60 with choice $1.70 to $2.80 average $1.75 to $2.30. One car of Mexican oranges was sold. Fancy, $2.60@4.20; average, $3.13 and choice, $2.05@3.00, average $2.32. A small quantity Floridas sold from $2.10 to $3.70, averaging $3.42. The condition was fairly good.

VALENCIAS—	Avge.
Glendora Heights, ACG Ex	$5.90
Pointer, ACG Ex	3.20
Hunter, ACG Ex	3.20
Artesia	5.25
Setter	4.00
Prairie Chicken, AH Ex	3.00
Pointer, ACG Ex	4.25
Sierra Celeste, WT Michaels	5.45
IXL, Fy. Benchley F Co	8.60
Premium, Ch, Benchley F Co	6.50
Superior, Ch, Benchley F Co	4.90

BOSTON, Tuesday, Oct. 25.—Three cars sold. Cool, cloudy. Market continues strong.

VALENCIAS—	Avge.
Butterfly, Covina Ex	$5.00
Prairie Chicken, AH Prenda	3.85
Navajo, AH Casa B	3.40
Squirrel, AH Prenda	4.40
Victoria AH Casa B	5.00

CHICAGO, Tuesday, Oct. 25.—Lemons—Firm market, offerings are small. Boxes—Californa choice to fine, $6.50@7.00.

Oranges—There is a steady call with Californias in small supply. Some Floridas and Mexicans coming. Grapefruit is also steady and selling fairly. Boxes—Late Valencias, extra choice, $4.25@4.50; choice, $3.25@3.75; Floridas, not fully ripe, $2.75@3.00; Mexican, $3.50@3.75; grapefruit, Florida crates depending on size and color, $3.00@3.75.

BEET PULP.

Secretary James Wilson, of the United States Department of Agriculture, takes a comprehensive view of all questions affecting the welfare of farmers and dairymen:

In a conference with the agriculture committee of the Denver Chamber of Commerce, August 8, he expressed his regret at the fact that the beet sugar industry in Colorado is not used for its full value. His reference was to the neglect of the beet pulp, which he declares is the best butter producer in the world.

Many people, however, are not ignorant of the facts he states, but on the contrary are availing themselves of the opportunity which beet sugar factories afford them to get supplies of sugar-beet-pulp, not only to feed while the factory is running, but many have erected, and are erecting, silos to hold a sufficient supply for their needs during the remainder of the year until beet slicing begins again.

Those who have done this have proven to their own satisfaction that the best results in the handling of a dairy are obtained when they keep up the milk flow as nearly the year around as possible.

OF VALUE TO HORSEMEN.

Do you turn your horses out for the winter? If so, we want to call your attention to a very important matter. Horses which have been used steadily at work, either on the farm or road, have quite likely had some strains whereby lameness or enlargements have been caused. Or perhaps new life is needed to be infused into their legs. Gombault's Caustic Balsam applied as per directions, just as you are turning the horse out will be of great benefit; and this is the time when it can be used very successfully. One great advantage in using this remedy is that after it is applied it needs no care or attention, but does its work well and at a time when the horse is having a rest. Of course it can be used with equal success while horses are in the stable, but many people in turning their horses out would use Caustic Balsam if they were reminded of it, and this article is given as a reminder.

AT KENTON STATION.

The Oregon offices of the Pacific Tank and Pipe Co. which have been located at 210 Wells Fargo Building, Portland, are to be moved to the factory at Kenton Station Portland, Oregon, after November 1.

The office will be most commodious and complete in the big, new office building which adjoins the factory. The big concern is the one which manufactures pipe for water systems, machine banded pipe, continuous stave pipe, irrigation pipe, wood and steel towers, water tanks, oil tanks wine tanks, mining tanks, cyanide tanks, zinc boxes, automatic distributors, zinc lathes, discharge doors, agitators, classifiers, planing mill work, disappearing doors and boxes.

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New lumber, $15 per thousand.
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Drilling Machines, Engines, Cordage, Etc.

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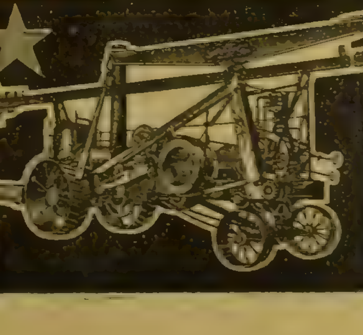

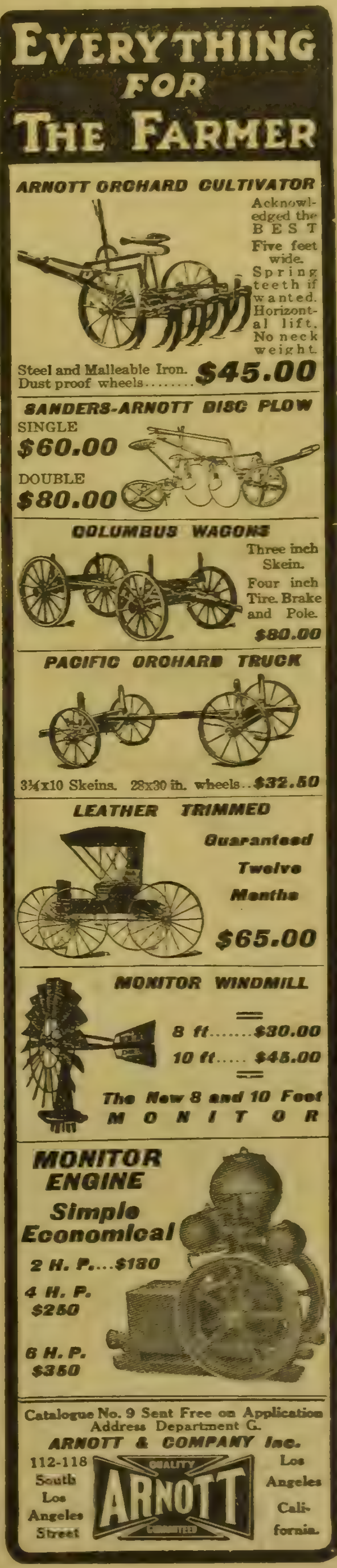

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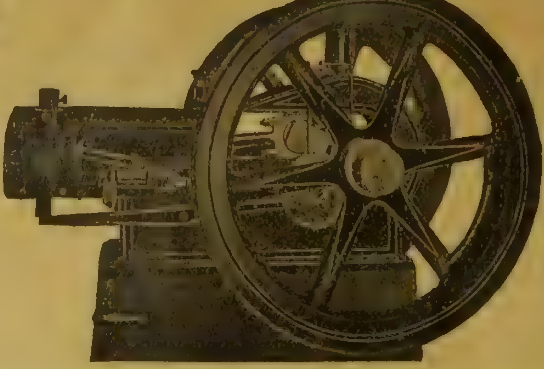

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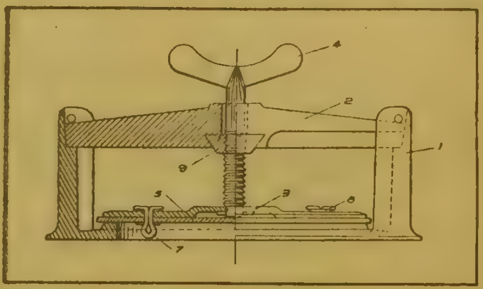
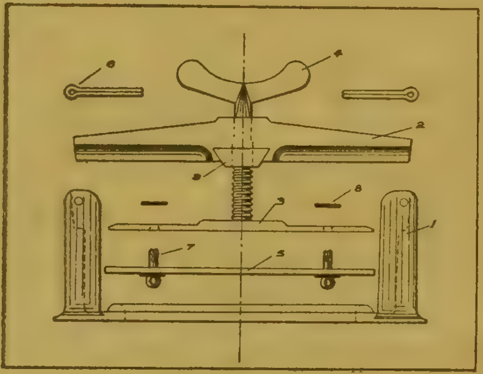
POMONA CIRCULAR VALVE





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The Pomona Valve is constructed with non-corrosive parts, thus insuring a workable valve regardless of infrequent use. All fastening held in place by cotter pins, thereby making a very cheaply constructed valve and yet a very substantial one.

Valve Parts

1 Frame
2 Cross Bar
3 Top or Lid
4 Brass Thumb Screw
5 Gasket
6 Cotter Pin
7 Cotter Pin
8 Cotter Pin Washer
9 Brass Nut

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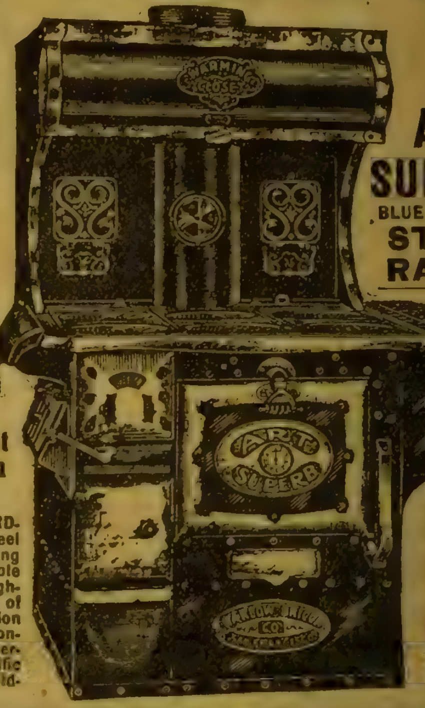

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Is made of cold rolled polished plate steel. Requires no blackening. Parts exposed to the heat thoroughly protected by asbestos sheet covered with steel. Closely riveted.

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Heavy steel, protected and strongly braced. Seams and joints riveted. Will not warp or buckle. Patent balanced door. Adjustable steel shelf. Bright inside.

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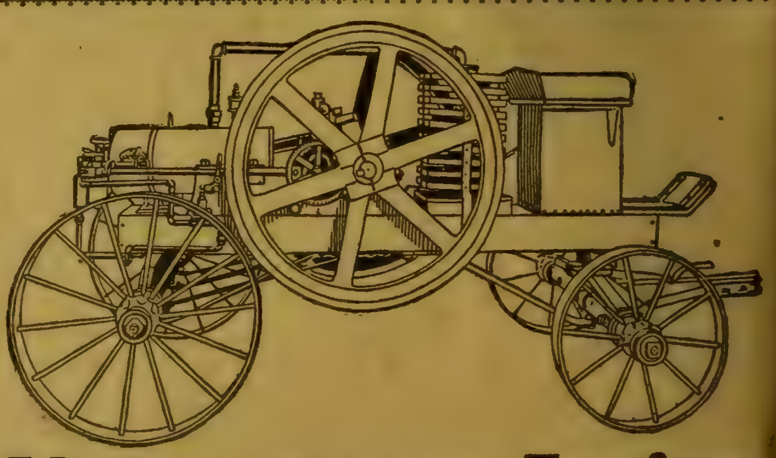

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Los Angeles November 3, 1910 San Francisco

SPRAYING: WHEN, WHY AND HOW TO DO IT

Spray Formulas and a Calendar Outlining Treatment for Fungous Diseases and Insects. Tables Worth Keeping for Reference. Profitable Crops Require Attention to Pests.

The number of troubles affecting growing plants is so great that many become discouraged and feel that all nature is combined against them. There are others, however, who look at these "troubles" as a blessing. We once heard a most successful orchardist refer to the red scale as one of the greatest blessings that ever struck his community. He said that it was one thing that helped to prevent overproduction. The shiftless, lazy ranchers became discouraged and quit, and the energetic man who continued the fight, grew good fruit and secured good prices. To a degree this may be true, for it must be admitted that in sections where fruits grow spontaneously, as in the tropics, a most shiftless class occupies the ground. There are some troubles, however, which even energetic treatment has failed to remove. Once fully established it seems impossible to eradicate them. Therefore preventive measures through resistant plants or otherwise must be adopted. For the troubles which may be reached by sprays and similar treatment, we have gathered together a number of formulas and methods of handling which we believe will make this issue of the Cultivator worth preserving for reference.

The troubles or diseases which confront the grower may be divided into three general classes. The first we may call physical. These may be caused by conditions of the air, soil or water. Second, plant parasites, of which there are two general classes, bacteria and fungi. Third, animal parasites and pests, which may also be divided into two general classes, those which attack the roots and those which attack the stems, branches, leaves flowers and fruit.

Physical Troubles.

In the first division, troubles caused by physical conditions, common sense is the principal treatment. You cannot "farm against climate," so it is presumed that climatic conditions have been observed before the orchard was planted. Another harmful condition of the air is caused in certain localities of this state where smelters have been established and release into the atmosphere poisonous gases which make impossible culture of the ground within a certain radius. Of course the only treatment for such a trouble is to remove the cause. The physical condition of soil leads into too extended discussion for treatment here other than mere reference to some of the troubles caused by it. The common "gum disease" of the orange has been shown to be caused by compacting of the earth about the roots. Mottle leaf is possibly another example. Another is death of plants from soggy condition of the soil continuing so long as to shut out air from the roots, which is a requisite for all healthy growth. Water and its chemical constituents are factors in the health of all plants. Too much alkali in it, for instance, means the death of the plant.

Parasites of Vegetable Nature.

The first plant parasites mentioned above, bacteria, are almost impossible to control. An example of this trouble may be seen in pear blight and walnut blight. The cause is within the tissues of the plant so that it may not be attacked by any spray. The only method of combating is by removal of parts diseased, or still better, use of resistant varieties. For example, the Kiefer pear is comparatively resistant to blight. The Bartlett, on the other hand is most susceptible, but its quality demands its continued culture, and growers have found a measure of success in cutting off and burning diseased parts of the tree, using care in disinfecting tools and wound left by cut to prevent further spread of the disease. This method of handling has been found to be especially effective where entire neighborhoods unite. Again, in the case of annuals, sterilizing of seed is sometimes efficacious. For this purpose corrosive sublimate, sulphate of copper and other chemicals are used.

Fungi.

Many of the fungous troubles are more easily reached through sprays, though some are as perplexing as the bacterial troubles. Of fungicides there are many, though the one principally used is the Bordeaux mixture. Its use, however, is almost entirely as a preventive, for after a fungus has taken possession of a plant and begun to draw its sustenance from the inner tissues, it is impossible to remove it without destroying the plant. The mildews and one or two other troubles may be reached after they have put in an appearance, but once the rusts and smuts have taken possession, they cannot be removed.

Where coloring of the fruit is objectionable, the ammoniacal copper carbonate is often used. The lime-sulphur wash is one of the combined fungicides and insecticides, and it is one of the best. Other fungicides are potassium sulphide, flowers of sulphur, copper sulphate, corrosive sublimate, and formalin.

Animal Pests and Parasites.

The most difficult of the animal pests to reach are those which attack the roots. As examples of these insect pests we may mention phylloxera, borers, wooly aphis. These pests may be reached to only a very limited extent by use of carbon bisulphide, tobacco extracts, gas lime, or other similar materials spread on the ground and covered. The more satisfactory method is the preventive by use of resistant stocks.

Insects which attack the top or above ground portions of plants are divided into two general classes, the biting and sucking. The biting insects, or mandibulates, eat the leaf or fruit. There are a great many of this class which may be illustrated by the codling moth, potato beetles, slugs, caterpillars, etc. These are reached through their stomachs by use of poisons which may be dusted or sprayed over the plants or mixed with baits, or sometimes the pest may be destroyed by contact insecticides the same as are used for the sucking insects.

The sucking insects, under which class come all scales, aphis, and the mealy bug, can only be killed by application of a caustic or some substance which closes the pores of their bodies, usually in the form of a spray, or still better, they may be reached by fumes of poisonous gases. The only gas which has been used to any great extent for this purpose is hydrocyanic acid gas.

* * *

FORMULAS FOR FUNGICIDES.

1. Bordeaux Mixture.

Notwithstanding possible injury from the use of Bordeaux mixture, it continues to be the most generally used of any fungicide. Its effectiveness and harmlessness to plants depends upon care used in its manufacture, on condition of atmosphere and of plant. The formula ordinarily used, the 5-5-50, is entirely harmless when the plant is dormant. It may also be used on some growing plants; others it will kill or greatly injure. It may be used even stronger than the formula given when the plant is dormant, but these proportions are effective with most fungous troubles. By the 5-5-50 formula is meant:

(a)	Copper sulphate	5 pounds
	Stone lime	5 pounds
	Water	50 gallons

The weaker solution is

(b)	Copper sulphate	3 pounds
	Stone lime	5 pounds
	Water	50 gallons

To mix, dissolve the copper sulphate with water in proportion of one pound of sulphate to sufficient water to make one gallon of solution for each pound of sulphate used. The stone lime may be slaked and dissolved in water in the same proportions as the sulphate. This gives convenient stock solutions, every gallon of which contains one pound of lime or of sulphate. To make the mixture from these stock solutions take, say, five gallons of the lime solution which will contain five pounds of stone lime, and five gallons of the sulphate solution which will contain five pounds of copper sulphate. Five gallons of each of these two solutions may now be mixed with water by pouring through a strainer into water sufficient to make 50 gallons. Do not mix the solutions before pouring into the water.

2. Ammoniacal Copper Carbonate.

Copper carbonate	5 ounces
Ammonia (26° Baume)	3 pints
Water	50 gallons

The strong ammonia which must be handled carefully, may be diluted to about five times its volume, and the copper carbonate may be rubbed up with water in a small vessel to form a thin paste. Add this paste to the dilute ammonia by constant stirring. Then add water sufficient to make 50 gallons. Use as promptly as possible owing to rapid evaporation of ammonia.

3. Potassium Sulphide.

Potassium sulphide	6 ounces
Water	100 gallons

This is employed when coloring of foliage is not desirable.

4. Flowers of Sulphur.

Flowers of sulphur (use high-grade) is effective on surface mildews when dusted over the plant when leaves are moist. Sulphuric acid 1-1000 has also proven successful on rose mildew and similar fungi.

5. Copper Sulphate.

Copper sulphate	1 pound
Water	15 gallons

For use on dormant trees or for disinfecting seeds copper sulphate without lime may be employed. The stock may be mixed as for Bordeaux. On growing plants it may be used with a reasonable degree of safety at the rate of one pound to 100 gallons of water.

6. Corrosive Sublimate.

Corrosive sublimate	2 ounces
Water	15 gallons

Corrosive sublimate or bichloride of mercury, one of the deadliest of poisons to animal life, is a very effective disinfectant and fungicide. It is one of the best preventives of potato scab. The above formula is practically a solution of 1-1000 by weight, and is the same strength used by physicians for disinfecting purposes. This is one of the solutions used after pruning for antiseptic dressing of wounds of trees affected with blight. It should be made and kept in wooden or earthen vessels.

7. Formalin.

Formaldehyde vapor dissolved in water in what is usually called the 40 per cent solution is one of the best fungicides and is often used in place of corrosive sublimate. It is also used for treating seed potatoes, oats and wheat. It should be employed in strength of

Formalin	1 ounce
Water	2 gallons

Sulphur sprays given under "Con-

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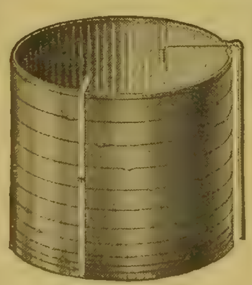

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Strictly Private, Calls Instantaneous
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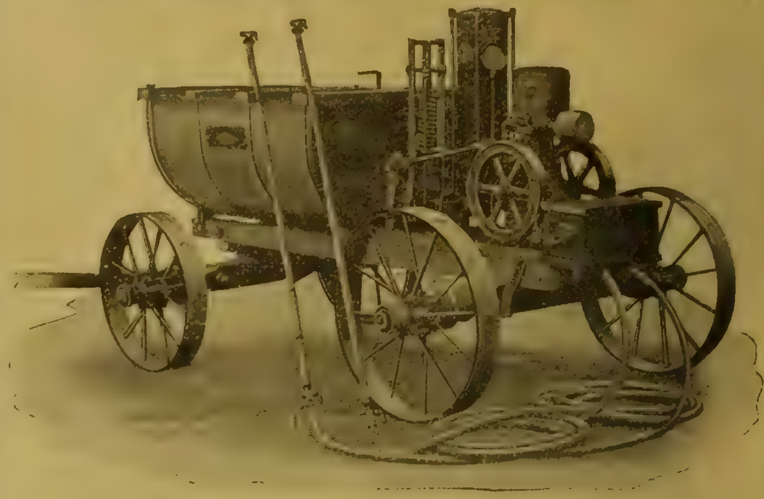
Our Long Distance Service is Unexcelled

BEAN PONY NO. 140

A Power Sprayer for the Average Grower



A first-class outfit for medium size orchards. It has twice the capacity of a hand pump, supplying two large nozzles at heavy pressure. What's more—it operates at one-eighth the expense of a hand sprayer, not to mention the saving in time and labor.

Built low down—has solid steel platform—and weighs altogether but 1175 pounds. You can haul it anywhere you can take a hand outfit—and it's equally as easy to handle on hilly ground as it is on the level.

Call on your nearest Bean agent, or

Write for our new 1911 catalogue

It tells all about the Bean Pony, the Bean Giant, the Bean Challenge, and all Bean outfits and accessories and describes power sprayers for from $105.00 up.

Free to all who are interested. Ready for mailing Nov. 1.

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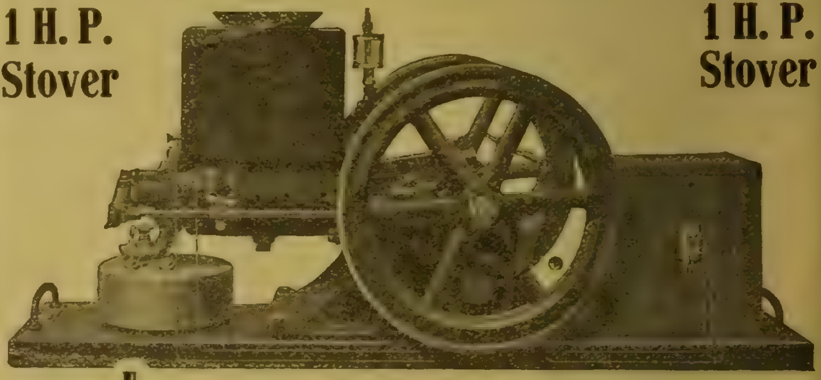
1 H. P. Stover **1 H. P. Stover**



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It is water cooled and possesses all the usual good parts of the larger Stover Engines.

We can give you more water than a windmill for about the same money.

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354 South Los Angeles Street
LOS ANGELES CAL.

California Cultivator

Vol. XXXV—No. 18 Los Angeles, California, Thursday, November 3, 1910 Subscription $1 a Year

Plant Health Requires Freedom from Insect and Fungous Pests

tact Insecticides" are also fungicides.

CONTACT INSECTICIDES.

8. Lime-Sulphur.

Quicklime	33 pounds
Sulphur	66 pounds
Water	200 gallons

Sift sulphur through box with screen bottom into boiling tank with 50 gallons of water. Add the lime and boil 45 minutes to one hour. Stir frequently. Strain through cheesecloth or burlap and dilute to make 200 gallons. If extra lime is desired strain in milk of lime when spray is ready for use.

9. Commercial Lime-Sulphur.

The standard strength corresponding to the above formula is obtained when commercial solution is diluted 1 to 11.

10. Lime-Sulphur for Use on Foliage.

Commercial material	1 gallon
Water	30 gallons

Measure the water for the spray into the spray tank and add the lime and sulphur, agitating thoroughly.

11. Self Boiled Lime-Sulphur.

Flowers of sulphur	8 pounds
Lump lime	8 pounds
Cold water	50 gallons

Place the lime and sulphur together in a barrel and add just enough cold water to slake the lime, stirring constantly to prevent burning. Keep a piece of old carpet or burlap sack over the top of the barrel to retain all the heat possible. Watch the mixture carefully and as soon as an orange colored liquid starts to gather on the surface add the rest of the water. Strain through a fine seive to remove the particles of lime, but work all the sulphur through.

Do not use hot water or allow the mixture to stand after the lime is slaked and before dilution. In this spray we do not want the soluble sulphides (orange colored) to form, for these will injure the foliage and fruit.

12. Resin Wash.

Resin	20 pounds
Lye (concentrated)	5 gallons
Fish oil	2½ gallons
Water	100 gallons

Put resin, lye and fish oil, with sufficient water to cover them well, into a large iron kettle and heat until all are well mixed and thoroughly dissolved. Add cold or hot water to make when finished 100 gallons of spraying material. This is one of the oldest sprays and very adhesive. Its great drawback is the time required for mixing and the expense.

13. Distillate Emulsion.

Distillate (28° Baume)	20 gallons
Whale Oil Soap	30 pounds
Water to mix	12 gallons

Dissolve the whale oil soap in the hot water, then add the distillate and stir for a short time while it is still hot. Dilute each gallon of above to 20 gallons with water.

14. Kerosene Emulsion.

Kerosene	20 gallons
Whale oil soap	5 pounds
Water	10 gallons

Dissolve the soap in hot water. Add the kerosene while the suds are still hot (be careful not to get the kerosene too close to the fire) and stir thoroughly. Dilute with cold water 1 to 8.

The emulsions are more satisfactory for hand pumps or even power pumps. They are less injurious to the tree and do not need as much agitation as a tree distillate spray.

15. Distillate.

Distillate 28°, refined for tree use	12 gallons
Water	200 gallons

For use only with power sprayer with good agitator which is necessary to make a mechanical mixture of the oil and water.

16. Distillate-Potash.

Distillate	10 gallons
Lye or caustic soda	5 pounds
Water	200 gallons

Use only with power pump and agitator.

17. Distillate-Tobacco.

Distillate	4 gallons
Black leaf tobacco extract	3 gallons
Water	200 gallons

For thrips and plant lice. To be applied by power outfit with agitator only.

18. Miscible Oils.

Commercial preparations to be used according to directions.

19. Kerosene-Water Mixture.

Kerosene or water white oil	20 gallons
Water	200 gallons

Application by power outfit only.

20. Soap solution.

Whale oil or any good soap	1 pound
Water	6-12 gallons

21. Tobacco.

Tobacco stems	1 pound
Water	4 gallons

Steep tobacco in one gallon hot water. Dilute to 3 or 4 gallons.

or

Black leaf extract	1 gallon
Water	60-70 gallons

22. Sulphur.

(a) Flowers of sulphur	20 lbs.
Hydrated lime	20 lbs.

Thoroughly dust over the foliage, if possible when moist with dew, sulphur mixed with hydrated lime in even parts. The lime is used to increase the adhesiveness, and this has been found fully as effective and more economical than when sulphur is used full strength. If preferred mixed with water, use:

(b) Sulphur	30 pounds
Stone lime	15 pounds
Water	200 gallons

COMBINED INSECTICIDES AND FUNGICIDES.

It is found desirable at times to combat both the insect pests and the fungi at one application of the spray and for this a combination of the insecticide and fungicide is used. This results in a saving in the cost of labor and time spent in spraying.

23. Bordeaux-Arsenate of Lead.

Arsenate of lead	2 pounds
Bordeaux Mixture	50 gallons

or

Arsenate of soda	10 ounces
Acetate of lead	24 ounces
Bordeaux mixture	50 gallons

Prepare the commercial arsenate of lead by working into a smooth paste and add it to the diluted milk of lime. Prepare the home-made arsenate of lead as follows: Take the arsenate of soda and dissolve this in a gallon of water (preferably hot) and in another gallon of water dissolve the acetate of lead. When completely dissolved pour the two simultaneously into the mixing tub containing the rest of the 50 gallons of water; stir well and the spray is ready. The use of wooden vessels is advised in handling these solutions.

Where a stronger poison is desired the arsenate of lead can be increased to 3 or 4 pounds. A more uniform distribution of the arsenate of lead is secured throughout the spray when it is added to the milk of lime instead of placing it in the spray tank.

24. Bordeaux-Paris Green.

Paris Green	4 ounces
Bordeaux Mixture	50 gallons

Mix the Paris green into a thin paste and add to the milk of lime and proceed to mix the Bordeaux according to the directions given in Formula No. 1.

25. Lime-Sulphur and Arsenate of Lead.

(a) Arsenate of lead	2 pounds
Commercial lime and sulphur	1¾ gallons
Water	48 gallons

or

(b) Arsenate of lead	2 pounds
Self boiled lime and sulphur	50 gallons

Have the arsenate of lead in the form of a smooth paste and add to the lime and sulphur solution at the same time stirring the spray thoroughly. If a power sprayer is used it is advisable to keep the agitator working.

POISON INSECTICIDES FOR CHEWING INSECTS.

26. Lead Arsenate.

Lead-arsenate	6—10 pounds
Water	200 gallons

First mix arsenate of lead with two or three gallons of water.

27. Paris Green.

Lime	5 pounds
Paris Green	1 1-3 pounds
Water	200 gallons

28. White Hellebore.

White hellebore	1 pound
Water	50 gallons

Mix the hellebore with a small quantity of water and pour into the spray tank containing the required amount of water.

White hellebore may also be applied as a dust spray by mixing with 5 to 10 parts of flour or road dust, and with this, dust the plants when the dew is on, either early in the morning or late in the evening. White hellebore loses its strength very rapidly when exposed to the air, and should be kept in air tight receptacles. Material carried over from one year to the next is liable to be of little value.

29. Vegetable Bait.

Valuable protection of gardens and low growing plants may be had by use of a vegetable bait which grasshoppers, army worms and similar pests may prefer to the growing crop. This is prepared by spraying a small portion of alfalfa or white clover with a solution of

Paris Green	1 pound
Water	150 gallons.

then distributing where protection is needed, preferably at night as the bait will keep its freshness longer and also because the principal depredations of the pest are at night.

30. Bran Mash.

Bran or flour	10 parts
Paris Green	1 part
Molasses or glucose	2 parts

31. Criddle Mixture.

Paris green	1 part
Salt	2 parts
Horse manure	40 parts

Water to make soft not sloppy. Scatter through grove.

FUMIGATION.

32. Hydrocyanic Acid Gas.

The amount of chemicals necessary for success in fumigation varies according to size of tent, density of foliage and weave of cloth of which tent is made, but approximately we may say that one ounce of cyanide to each 100 cubic feet of space, exposed for one hour, is a reasonably strong dose. For black scales and similar easily killed insects, such a dosage is sufficient, but for purple, red, yellow scale and mealy bug a dose of as much as 1½ ounces to each 100 cubic feet may be necessary. This latter formula will be considered Formula 32a, and the one ounce dose, 32b. The proportions are as follows:

32a Potassium cyanide	1½ ounces
Sulphuric acid	1½ ounces
Water	4½ ounces

32b Potassium cyanide	1 ounce
Sulphuric acid	1 ounce
Water	3 ounces

Water and acid to be placed in vessel under tent or in room and cyanide added only when all is ready to close up the tent as tightly as possible.

33. Carbon Bi-Sulphide.

Carbon bi-sulphide, one pint to each 1000 cubic feet of space. Place liquid in saucers or shallow vessels near top of room or over seed to be fumigated. For underground insects a tablespoonful placed in holes a few feet apart and covered tightly, works satisfactorily. For squirrels place one ounce on a piece of cottom, insert in hole and tamp tightly.

34. Smoke.

For exterminating squirrels, gophers, etc., the use of smoke of common brown paper or old rags pumped into holes with proper appliance accomplishes good results in winter or when ground is wet. Some have found the addition of sulphur to rags or paper increases the effectiveness.

* * *

The calendar which follows gives only the number of the formula which is given in the preceding columns. That is, instead of giving particulars of sulphur-lime wash under "aphis, green" we say "apply 8 or 9," referring to the numbers of those formulas.

APPLES, PEARS, AND QUINCES.

Insect Pests.

Aphis, Green (Aphis mali). Apply 8 or 9 just before buds open, if orchard has been badly infected in past years. Apply 14, 17, or 21 as soon as the insects make their first appearance.

Aphis, Leaf-Curling (of doubtful origin). Same as for Green Aphis.

Aphis, Woolly (Schizoneura lanigera). Spray with 14, 17, or 21 whenever this pest appears above ground. Use at least 150 pounds pressure. For underground forms proceed as follows: Remove soil until upper roots are exposed at the base of the tree. Pour several gallons of 21 around crown and replace soil when it has soaked in. Repeat often.

Bud Moth (Lithophane antennata). Use 8 in winter, and 26 or 27 before leaf buds open and after blossoms fall. Repeat every ten days if necessary.

Brown Apricot Scale (Eulecanium armeniacum). Apply 13, 14 or 15 just as soon as the leaves fall. All applications should be made before Dec. 1st.

Codling Moth (Carpocapsa pomonella L.). Apply 23, 24, 26, or 27 just as soon as blossoms fall. Continue to spray at intervals of ten days or two weeks throughout the season (at least 4 times).

Canker Worms. Fall Canker Worm (Anesopteryx pometaria Harris), Spring Canker Worm (Paleacrita vernata Peck). Apply 26 or 27 when worms first appear. Spray as often as needed. Tanglefoot bands on the tree are very effective in keeping the caterpillars from the trees.

Greedy Scale (Aspidiotus camelliae). Apply 8-10 or 15 when trees are dormant. This scale seldom needs treatment.

Oyster Shell Scale (Lepidosaphes pomorum). Apply 8-10 when trees are dormant.

Pear Slug (Selandria cerasi Peck). Dust on Paris Green, Hellebore or Pyrethrum.

San Jose Scale (Aspidiotus perniciosus). Apply 8-16 when trees are dormant. If 9 is used be sure it is no weaker than given. Repeat in spring.

Tussock Moth (Hemerocampa leucostigma S. & R.). Pick off eggs several times during the winter. When young caterpillars appear jar from the tree, and apply tanglefoot band one foot below fork.

Fungoid or Bacterial Diseases.

Black Spot Canker (Myxosporium curvisporum Sacc.). Apply 1-a. the first and 15th of November.

Bitter Rot (Glomeralla ruformaculans). Apply 1-b. or 2 at first appearance of rot. Repeat every two weeks if needed.

Moss 'or Lichens. Apply 1-a, 8 or 16 when trees are dormant.

Powdery Mildew (Podosphaera oxycanthae). Apply 1-a when trees are dormant, then 1-b during spring and early summer. Remove mildewed tips in winter. Apply 8 just before buds open.

Sappy Bark. Cut away diseased parts when trees are dormant.

Scab (Venturia inaequalis, Winter). Apply 1-a before buds start. Spray again with 1-b as soon as blossoms fall. Repeat several times at intervals of three or four weeks. (This should be done especially if the weather is damp.)

CITRUS FRUITS.

Insect Pests.

Black Scale (Saissetia oleae) Fumigate with 32-b during period between September 1st and January 1st. Spray young trees with 12-15 during the months of September, October and November. Remove Nightshade from orchard before fumigation to prevent reinfection. Fumigate also olive trees or oleanders which may be near your orchard.

Chaff Scale (Parletoria pergandii). Fumigate with 32-b at any season.

Fuller's Rose Weevil (Aramagus fulleri). This insect cannot fly and can be kept from the trees by means of tanglefoot bands.

Hemispherical Scale (Saissetia hemispherica). Same as for Black Scale.

Long Scale (Lepidosaphes gloverii). Fumigate as soon as found with 32-b. Repeat if living forms are found a month later.

Mealy Bugs: Long Tailed Mealy Bug (Pseudococcus longispinus); Citrus Mealy Bug (Pseudococcus citri); Fumigate as soon as found with 32-b applied as follows: Give regular dose and at the end of one hour's exposure repeat the dose and expose for another hour, thus making the dose twice 32-b and the entire exposure two hours.

Oleander Scale (Aspidiotus hederae). Fumigate with 32-a. Not a serious citrus pest.

Orange aphis (Aphis citri, Ash.). Spray with 14 or 21 as soon as found.

Purple Scale (Lepidosaphes beckii). Fumigate with 32-b as soon as located and repeat in one month if necessary.

Red Scale (Crysomphalus aurantii). Treat same as Purple Scale.

Red Spider (Tetranychus mytilaspidis). Apply 22-b when foliage is damp. Repeat until pests disappear.

Yellow Scale (Chrysomphalus aurantii citrinus). Treat same as for Purple and Red Scale.

White Cottony Cushion Scale (Icerya purchasi, Mask.). This pest is handled perfectly by its natural enemy, Novius cardinalis, commonly called the "Vedalia," which may be had from the State Insectary, Sacramento. Release colony at any time of year scale appears.

White Fly (Aleyrodes citri). Defoliate trees when the larvae appear and scrub with 16 or 20. Better to fumigate with 32-a.

Thrips (Euthrips citri). Spray with 17 in spring.

Army Worms (Various species). Apply 30 under trees; also if they have not already secured access to orchard, surround trees with deep furrow, vertical side toward trees. If cover crops are growing, remove such growths as project up into branches of the trees. Paint tanglefoot bands around tree trunk.

Fungoid and Bacterial Diseases.

Brown Rot (Pythiacystis citrophthora). Sow cover crop in orchard. Plow under in spring and cultivate well under the trees. In washer use 7, bluestone, or permanganate of potash. Eliminate infected fruit and disinfect boxes and picking sacks.

Dieback (Bacterial). Improve physical conditions of trees by deeper and more thorough tilling of soil. If excessive applications of nitrogenous fertilizers have been made, discontinue until tree has resumed normal conditions.

Gum Disease, Mal-di-goma. Scrape gum from diseased parts. Apply neat's-foot oil and improve physical conditions of the tree by deep culture of the soil. If soil about the trunk roots is compact and excessively hard, remove and substitute sand or loose soil.

Mottle Leaf (Physical). Improve physical condition of tree by deep culture. Make applications of lime and manure to soil. Examine soil as to hardpan, and if it exists, break up if possible.

Smut (Meliola camelliae, Sacc.). A fungous growth caused by honey dew exuded by scale insects, plant lice and white fly. Remove pest and smut will disappear.

Wither Tip (Colletotrichum gloeosporioides, Penz.) Apply 1-a as soon as it appears and repeat as often as necessary.

PEACH, NECTARINE, AND APRICOT.

Insect Pests.

Aphis, Black Peach (Aphis persicaeniger). For those above ground use 14 or 21. Destroy the underground forms by pouring carbon bi-sulphide into holes in the ground (made by a crowbar) six inches to six feet away from the tree and about two feet apart. Pour 21 around base of tree often.

Apricot Scale (Eulecanium armeniacum). Apply 13, 14, or 15 just as soon as the leaves fall. All applications should be made before the first of December.

Black Scale (Saissetia oleae). Same as Apricot Scale.

Borer, Peach Tree (Sanninoidae exitiosa, Say). Dig out and kill, or

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All the above with Phosphoric Acid, Chlorine, Alkalinity, and approximate Humus	4.00
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destroy by inserting a flexible wire into their burrows.

Bud Moth (Lithophane antennata). Use 8 during winter months when tree is dormant. Use 26 or 27 just before leaf-buds open and just after blossoms fall. Repeat every ten days if necessary.

San Jose Scale (Aspidiotus perniciosus). Spray with 8-16 when trees are dormant .

Twig Borer (Anarisa lineatella). Spray with 8-10 just when the buds are swelling.

Fungoid and Bacterial Diseases.

Blight, Peach (Coryneum beyerinkii). Spray last of November or before December 15th with 1-a, 8, or 9.

Curl Leaf (Exoascus deformans, Fuckel). Spray thoroughly with 1-a, 8-10 just before buds begin to open. Later sprayings should be made with 1-b.

Shot-hole Fungus (Coryneum sp?). Spray with 1-a about 10 days before buds open and with 1-b when fruit is about one-fourth grown.

Yellows. Dig out trees when found infested. Be sure and take out one or two feet of the infested roots.

CHERRIES, PRUNES, PLUMS.

Insect Pests.

Cherry Slugs (Eriocampoides limacina and Eriocampa cerasi). Feed upon the upper surfaces of the leaves exposing the veins. Spray with 26 or 27 or dust 28 liberally upon the trees as soon as slugs appear.

Prune Aphis (Aphis prunifolii). Spray in the fall with 8, 9, 10, or 11 and as soon as the lice appear with 14 or 21.

Black Peach Aphis (Aphis persicae-niger Sm.). See same under Peach.

Peach Root-Borer (Sanninoidea opalescens). See same under Peach.

Canker Worm (Paleacrita vernata abd Alsophila pometaria). See same under Apple.

Tent Caterpillar (Malacosoma disstria). See same under Apple.

Brown Day Moth (Pseudohizis elanterina). Attacks particularly the prunes and cherries. Spray with 26 or 27 as soon as larvae appear.

Red Hump (Schizura concinna). Spray early with 26 or 27. Burn cocoons.

Fungoid and Bacterial Diseases.

Brown Rot or Fruit Mold (Sclerotinia fructigena Sch.). Produces a rot on the fruit. Spray with 1-a early in the spring, and with 1-b as soon as the buds begin to open.

Leaf Curl of Witches Broom (Exoascus cerasi Fuckel). Cut out and burn infested parts. Spray with 1-a early, and with 1-b as soon as the buds begin to swell.

Leaf Spot or Shot Hole Disease (Cylindrosporium padi Karst). Produces a shot-hole effect upon the leaves. Spray in early spring with 1-a, when the buds begin to open with 1-b, and when the fruit is one-fourth grown with 1-b.

Powdery Mildew (Podosphaera oxycanthae DC.) Appears on the leaves late in the season. Spray as soon as found with 1-b and repeat if necessary.

Crown Gall (Pseudomonas tumefacieus Erw. Smith & Town.). Causes a large gall or swelling at the crown of the tree. Remove gall and treat exposed part with 1-a. Select only healthy nursery stock. Do not injure base of trees.

Gummosis. Dig out the gum pockets and wash out with 1-a.

GRAPE.

Insect Pests.

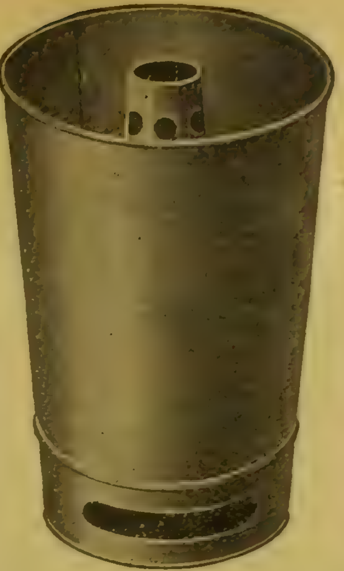
Grape Phylloxera (Phylloxera vastatrix). Attacks roots and foliage of of the vines. Plant resistant stock. Be sure of your nursery stock.

Vine Hopper (Typhlocyba comes Say). Infests foliage of the vines. Use hopper-doser in spring before adult females deposit their eggs. Spray as soon as the young begin to appear with 13 or 14.

Grasshoppers (See same under Beans.)

California Root Worm (Adoxus obscurus L.). A black beetle whose larvae attack the leaves, stems, petioles, roots and fruit of the vines. Cultivate deeply around the base of the vines. Spray with 26 or 27 as soon as beetles appear.

Imported Grape Root Worm (Adox-



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The "Flour City" has four cylinders, vertical, giving an absolutely steady pull on the draw bar. We have sold a number of these engines, and they are giving splendid satisfaction.

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us vitis Fou.). A brown beetle working the same as the California form and is controlled in the same manner.

Flea Beetle (Haltica carinata Germ.) Found very abundant in the vineyards near Cucamonga, Cal., during the year 1908. It infests the foliage and may be handled by spraying liberally with 26 or 27.

Hawk Moth (Philampeles achemon Drury). The large green larvae of this moth feed upon the foliage. Hand pick, or if too numerous spray with 26 or 27.

Grape Leaf Folder (Desmia funeralis Hub.). The larvae roll themselves up in the leaves which they eat. Spray with 26 or 27.

Other Pests.

Erinose (Eriophyes vitis). This so-called disease is produced by a small mite, which is characterized by forming swellings upon the upper surfaces of the leaves. Dust plants liberally with 4 when they are wet with dew.

Nematode Root Gall (Heterodera radicola Mull.). A minute worm attacking the small roots. Destroy all infested vines. Sterilize soil with 33. Plant only hardy varieties where this exists.

Fungoid and Bacterial Diseases.

Powdery Mildew (Uncinula spiralis and Uncinula necator Schw.). Grows upon the canes, leaves, and fruit. Dust often with 4 as soon as the disease appears. Spray early with 1-a.

Downy Mildew (Peronospora viticola DB.). Attacks all green portions of the plant—leaves, young shoots, and berries. Spray with 1-b as soon as first appearance is made.

BLACKBERRIES, RASPBERRIES, LOGANBERRIES, STRAWBERRIES.

Insect Pests.

Rose Scale (Aulacaspis rosae Bouché). A white scale thickly infesting the canes just above the surface of the ground. Spray with 8, 9, 12, 13, or 15.

San Jose Scale (Aspidiotus perniciosus Comst.). A small scale badly infesting the canes particularly of the raspberry. Spray with 8, 9, or 11.

Rose Chafer (Macrodactylus subspinosus Fab.) Appears about June 1st, when the plants begin to blossom. Destroys particularly the blossoms, and due to its great numbers, it is a very difficult insect to control. The following should be observed, however: Spray with 26 or 1-a as soon as the first beetles appear. Clean out all weeds or other plants which may afford breeding places. Hand pick when they first appear.

Strawberry Plant Louse (Myzus fragaefolii Ckll.). A light yellow louse attacking the buds, blossoms and young fruit. Spray with 14 or with 21.

Fungoid and Bacterial Diseases.

Orange Rust (Gymnoconia peckiana Tranz.). Forms orange-red colored masses on the leaves, which finally kill the plant. Dig out and burn all diseased plants as soon as rust first appears.

Leaf Spot of Blackberry and Raspberry (Septoria rubi West.). Produces small pale spots on the leaves. Spray with 1-b when leaves are half-grown and repeat every 2 weeks if necessary.

Leaf Spot of Strawberry (Mycosphaerella fragariae Lind.). This disease first appears as small discolored spots upon the leaves which destroy the tissues of the plant. Spray before the flowers open with 1-b. If the disease apears late, mow off and burn the leaves. Spray the newly appearing leaves with 1-b.

Powdery Mildew of the Strawberry (Sphaerotheca humuli). Produces a whitish powdery covering on the foliage which soon kills the plant. Dust with 4 when the plants are wet, or spray with 6.

Crown Gall (Pseudomonas tumefaciens Erw.). Affects, especially, the blackberry. Dig vines as soon as this trouble appears; there is no cure. Secure new, clean stock and plant on fresh ground.

CURRANTS AND GOOSEBERRIES.

Insect Pests.

San Jose Scale (Aspidiotus perniciosus Comst.). A small scale infest-

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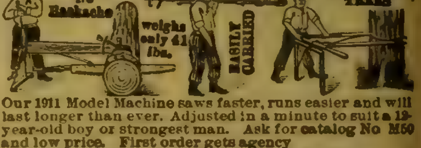

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ing the stalks. Spray anytime with 8, 9, or 11.

Currant Stem Borers (Sesia tipuliformis and Chrysobothris femorata). Small white larvae which bore into the stalks of the plants. As a preventive, wash plants in the spring with 20.

Imported Currant Worm (Nematus ventricosus Klug.). Attacks the leaves in the spring. Dust plants with 27 or 28 when they are wet, or spray with same.

Leaf Hopper (Empoasca albopecta Walsh). Usually appears in great numbers on the undersides of the leaves. Spray with 14 as soon as the first ones are noticed.

Currant Leaf Louse (Aphis ribis). Usually works upon the ends of the tender shoots and stunts their growth. Spray with 14 or 21.

Fungoid Pests.

Leaf Spot (Septoria ribis Desm). Produces large pale spots with brown borders upon the leaves. Spray with 1-b as soon as first spots appear and repeat as often as is necessary to keep down the disease. Spray with 1-b twice after fruit has been removed.

Anthracnose of Currant (Pseudopeziza ribis Kleb.). Produces small brown spots upon the leaves, petioles, young canes, fruit stalks, and fruits. Spray with 1-a before leaves appear and with 1-b while leaves are unfolding and repeat every three weeks until fruit ripens.

Gooseberry Mildew (Sphaerotheca morsuae B. & C.). Produces a mildew upon the stems, leaves, and particularly upon the berries, causing them to spoil. Spray with 1-b just as the buds are breaking open and repeat every 12 days until about July 1st. Spray plants in winter with 8, 9, or 11.

PEAS, BEANS, VETCH, CLOVER, ALFALFA.

Insect Pests.

Wireworms (Various species). Affect beans and many other garden plants. Rotation of crops to starve out the infestations is perhaps the best treatment. Where this cannot be done, the use of Carbon bisulphide in sandy ground is advised. Fertilize with Nitrate of Soda or Kainit.

Bean Aphis (Aphis rumicis L.). Works on the leaves, young shoots and tender pods causing much damage. It is usually cared for by an internal parasite and by a predacious Ladybird, but if it becomes too destructive spray with 14 or 21.

Green Pea Aphis (Siphonophora pisi). Also attacks vetch, geraniums, malva, and many other plants. Spray with 14 or 21.

Cut Worms (Peridroma saucia, Agrotis ypsilon). Do great damage to all crops at certain seasons. Plow around field so as to have straight side of furrow next to the crop. Poison with 29, 30 or 31.

Grasshoppers (Various species). Are very difficult to handle. Poisoned baits as given in 29, 30 and 31 have given good results.

Weevils:

Bean Weevil (Bruchus obtectus Say).

Pea Weevil (Bruchus pisorum L.). Fumigate seed with 33 and be sure that no infested seed is planted. Test by placing in water; infected seeds will float.

Fungoid and Bacterial Diseases.

Bean Anthracnose (Colletotrichum lindemuthianum B & C.). Produces brown sunken areas upon the pods. It also attacks the young plants. Treat seeds with 7 before planting. Spray with 1b as soon as young seedlings are well under way. Repeat if necessary. Practice clean cultural methods.

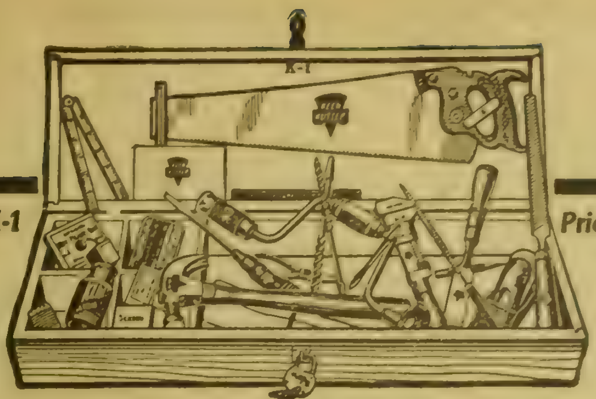
Bean Blight (Bacillus phaseoli). Attacks pods and produces wrinkled and distorted seed. Treat seed with 7 before planting.

Rust (Uromyces appendiculatus Lev.). Produces rust colored spots on foliage. Spray with 1-b. Burn all infested plants.

Downy Mildew (Phytophthora phaseoli Thax.). Turns foliage dark and causes it to wilt and die. Select clean seed. Spray with 1-b.

Downy Mildew of Alfalfa (Peronospora trifoliorum). Spray with 1-b or dust with 4.

Pea Mildew (Erysiphe polygoni



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The only positive eradicator of the **San Jose Scale, Red** and **Black Scale** and other insect pests.

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DC). Appears early and late, covering plant with a white felt-like powder. Spray with 1-b or dust with 4.

ONIONS, LEEKS, GARLICS, ETC.

Insect Pests.

Onion Thrips (Thrips tabaci Lind.). Attack the leaves and flowers causing considerable damage in some localities. Spray with 14 as an insecticide and with 1-b as a repellent.

Cutworms. See Beans, Peas, etc.

Fungoid Diseases.

Downy Mildew (Peronospora schleideniana DB). Produces a white mould on the leaves causing them to wilt and die. Spray with 1-b.

Onion Smut (Urocystis cepulae Frs.). First appears in the form of dark spots upon the leaves and later as longitudinal rifts upon the bulbs. The following drilled into the soil at the rate of 150 lbs. per acre has given good results: lime 50 lbs. mixed with sulphur 100 lbs. Also treat seed with 7 as they are being drilled into the soil.

CABBAGE, CAULIFLOWER, KALE, TURNIP, RADISH, MUSTARD.

Insect Pests.

Harlequin Cabbage Bug (Murgantia histrionica Hahn). Attacks all cruciferous plants, cultivated and uncultivated, as well as many other hosts. It is no little difficulty to keep these insects from taking a crop, but by observing the following they may be held in check: keep weeds from the fields at all times: plant late trap crops of kale or cabbage and burn them when they become infested, or kill the bugs with pure kerosene. Hand pick adult insects as soon as they first begin to appear. Spray with 14.

Cabbage Aphis (Aphis brassica). Attacks a wide range of cruciferous plants, cultivated and uncultivated. In time, it is subdued by parasitic and predacious enemies, but often not until it has done great damage. It can be controlled by spraying with 14 or 21.

Cabbage Worms (Larvae of Pieris brassicae, the Large White Butterfly, and of Pieris rapae, the Small White Butterfly). These green worms do great damage by destroying, for market, great quantities of cabbage and cauliflower. The State Insectary is at present propagating a very efficient parasite which destroys the chrysalid of this insect. As a repellent apply 28; as an insecticide apply 12.

Cut Worms. (See same under Beans, Peas, etc.).

Fungoid and Bacterial Diseases.

Club Root (Plasmodiophora brassicae Wor.). A disease producing a peculiar enlargement of the roots giving the plants an unhealthy appearance and finally causing their death. The disease may be carried over in the soil, so the following has been recommended as a means of control: lime the soil at a rate of 100 bushels per acre, every few years. Rotate crops. Employ clean culture methods.

Black Rot (Pseudomonas campestris Smith). A bacterial disease first producing a burnt margin on the leaves and finally causing them to drop. The disease is readily carried from year to year in the seed. Before planting treat the seed with 6 or 7. Eliminate infected plants as soon as they appear in the beds. Rotate crops.

TOMATO, POTATO, EGG-PLANT, TOBACCO, ETC.

Insect Pests.

Tomato Worms. (Are the larvae of two Sphynx Moths, Plegethontius quinquemaculata How. and Plegethontius sexta Joh.). These large green caterpillars feed upon the foliage and are easily recognized. Due to their large size, it is very effective to hand pick the infested area. If very numerous spray with 26 or 27.

Flea Beetle (Epitrix parvula Fab.). A very small beetle which works on the leaflets. As a repellent spray with 1-b; for an insecticide 26 or 27.

Twelve Spotted Cucumber Beetle (Diabrotica soror Lec.). A small green beetle with 12 black spots on the elytra. The larvae work on a great variety of plants. Spray with 26 or 27.

Tobacco Worms:

Northern or Horn Worm (Protoparce celeus).

Southern (Protoparce carolina).

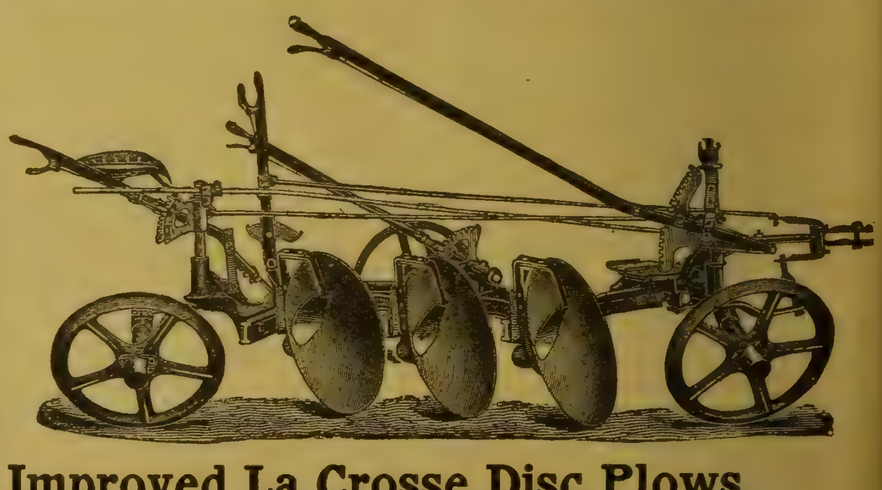
Resemble greatly the tomato worms in appearance and in their work. The methods of control are the same.

Cutworms. (See Beans, Peas, etc.).

Fungoid and Bacterial Diseases.

Winter Blight or Downy Mildew (Phytophthora infestans DB.) Attacks nearly all of the plants of this

Disc Plows Disc Plows



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Try one of our plows. If it does not do the work with less stock and do better work, don't pay for it. Our plows are sold on a guarantee, to work or no pay. Over 300 satisfied customers in Ventura County.

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Have your discs sharpened by us—we roll them out and make them better than new.

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family, killing the leaves and injuring the tubers. Plant clean seed. Disinfect doubtful seed with 7. Spray plants with 1-a as soon as symptoms first appear.

Root and Stem Rot (Corticium vagum var. solani Burt.). Causes a "damping-off" of seedlings. Also attacks the tubers of potatoes, the subterranean parts of the tomatoes, and the fruits touching the soil. Apply lime to aerate the soil. Rotate crops.

Dry Rot of Potatoes (Fusarium oxysporium Schl.).

Wilt of Tomatoes (Fusarium lycopersici Sacch.).

Wilt of Egg-plant (Fusarium sp.?).

All of these diseases produce a wilt upon the host plants, affect the roots, and may even cause a "damping-off" of seedlings. Treat seed with 7 before planting. Keep weeds out of fields in winter. Rotate crops, so as to have clean soil each year.

Early Blight (Macrosporium solani E. & M.). A typical leaf-blight causing brown spots to appear on the foliage. Affects potatoes, tomatoes and daturas. Spray with 1-a when the plants are six inches high and repeat with 3 applications 2 weeks apart. Treat seed with 7 before planting. Rotate crops.

Potato Scab (Oospora scabies Thax.). Produces large rough blotches on the tubers. This disease cannot be dealt with while the plants are growing. Great care must be exercised in the matter of seed selection. Treat all seed of doubtful origin with 7. Rotate crops so as to keep the soil fresh.

SQUASH, PUMPKINS, CUCUMBERS, MELONS, ETC.

Insect Pests.

Melon Aphis (Aphis gossypii Glov.). Attacks all parts of the vines and is usually accompanied by a black smut, which grows upon the honey-dew secreted by the louse. Spray with 14 or 21.

Cucumber Beetles, Striped (Diabrotica vittata Fab.).

12-spotted (Diabrotica soror Lec.). The larvae and adults of these beetles destroy flowers and foliage of the plants and gnaw the rinds of the fruit. Methods of control are as follows:

Repellents—Dust with 21 or with Naphthalene. Soak lumps of gypsum in a mixture of kerosene and turpentine and place them under infested vines. Insecticides—Dust with lime and then spray or dust with 27, or spray with 26.

Squash Bug (Anasa tristes DG.). Hand pick early in the season; also pick off eggs and destroy. Eggs are deposited in clusters on the leaves when the vines are very young. Trap bugs by laying boards loosely on the ground under which they crawl for protection. If very troublesome a repellent of gypsum saturated with kerosene scattered about the grounds is effective. As soon as crop is harvested, gather and burn vines. Do not allow weeds to grow on the ground during winter months.

Fungoid and Bacterial Diseases.

Downy Mildew (Pseudoperonospora cubensis Rost.). Disease first appears in the center of the vine and spreads outwardly. Spray with 1 b to which is added 1 gal. of sulphurous acid to every 100 gallons of spraying material. Repeat every 10 days.

Leaf Blight (Altenaria brassicae nigrescens Pegl.). Produces spots on the leaves which spread very rapidly. This disease hastens ripening, injures production, and destroys the quality of the fruit. It particularly affects cantaloupes. Destroy affected plants as soon as they first appear. Spray often with 1-b. Rotate crops.

Anthracnose (Colletotrichum lagenarium E. & H.). Forms circular dead spots on the leaves and long shrunken areas on the stems. The fruits of the watermelon are often badly spotted by this disease. Spray with 1-b as soon as fungus appears.

Common Wilt (Bacillus tracheiphilus Erw. Sm.). Produces a sudden wilt of the vines by stopping up the water-carrying vessels of the stems. Destroy infected plants as soon as infection appears.

Fusarium Wilt (Neocosmopora vasinfecta var. nivea). Can be handled only by crop rotation.

Powdery Mildew of the Cucumber (Erysiphe polygoni D C.). Attacks other members of this group also. Forms a white powdery coating on the leaves and stems and soon kills the plants. Spray as soon as it first appears with 1-b.

CELERY, CARROTS, PARSNIPS.

Insect Pests.

Celery Leaf-tyer (Phlyctaenia ferrugalis Hbn.). Destroys foliage, and its presence may be told by the many leaves which are curled and fastened together by this insect. It is particularly bad in greenhouses. Spray with 26 or 27 not later than 3 weeks before marketing crops, because of the danger of poisoning. Hand pick.

Viridescent Leaf-hopper (Empoasca viridescens Walsh). Use hopper doser in large fields or spray as soon as insects first appear with 14.

Cutworms. (See same under head of Beans, Peas, etc.)

Fungoid Diseases.

Celery Blight, Early Blight (Cercospora apii Fr.). Produces spots upon the leaves causing them to turn yellow, to wilt, and finally kills them. This disease also affects parsnips, and usually appears early in the season. Spray early and repeatedly with 1-a or with 2.

Late Blight (Septoria petroselini var. apii B. & C.). Produces rusty brown spots upon the leaflets which may rapidly spread to cover the entire foliage. Spray with 1-a throughout the season.

ASPARAGUS.

Insect Pests.

Asparagus Beetle (Crioceris asparagi L.). Dust air slacked lime upon the plants when they are wet with dew. Apply 26 dry. As a repellent spray with 28.

Fungoid Diseases.

Asparagus Rust (Puccinia asparagi DC.). Attacks the bushy tops, producing black and red rust, the latter being the destructive stage. Keep the plants cut back until July 1st. Apply 150 to 200 lbs. of 22 dry per acre, three weeks after cutting tops and before rust appears. Make the applications in the morning when the plants are wet with dew, or first spray with 1-b.

The Family Orchard

Special attention to the selection of suitable varieties.

Leonard-Coates Nursery Co., Inc.
MORGANHILL, CAL.
New catalogue ready

CORN, SORGHUM.

Insect Pests.

Corn Worm (Heliothis armiger). Is hard to deal with because it works on the ear in the husk. It is best handled by the rotation of crops, late plowing followed by harrowing to destroy the pupae in the soil, and by planting crop as early as possible to assure rapid growth.

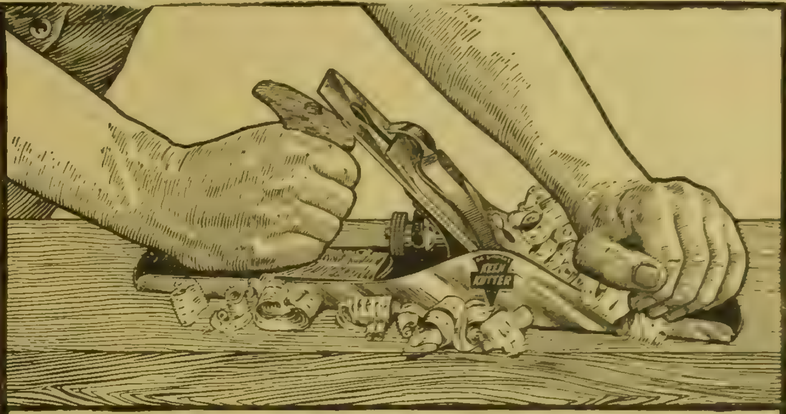
Corn Root Aphis (Aphis maidi-radicis Forbes). Attacks the roots causing a dwarfing of plants in patches over the fields. Crop rotation is the most important method of control. Stir old corn ground thoroughly before planting it again to corn.

Wire Worms (See same under Beans).

Fungoid Diseases.

Smut (Ustilago zeae Ung.). Causes enormous enlargements of the kernels, producing large sacs of smut. Cut off and burn the first infestations. Treat seed with 7 before planting. Rotate crops.

Wilt of Sweet Corn (Pseudomonus stewarti Erw. Smith). Plants die by wilting due to the shutting off of the water supply. Select resistant stock. Treat seed with 7 before planting. Rotate crops.



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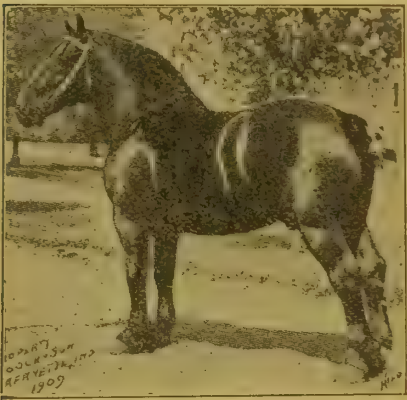

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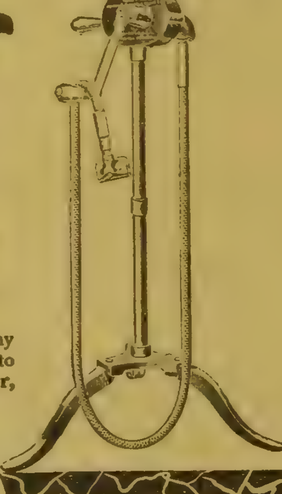

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MAKING THE DAIRY PAY.

By Mrs. M. E. Sherman.

Success in any branch of live stock raising seems to depend on the man more than on any other one thing. I know men that have made good on common cattle, while others have made complete failure with the best of cows. Scrub brains will fail to find profit in the dairy if the finest cows in the world are put under their care for any length of time. It seems as if success in cattle or in any stock raising was not a matter of education, but of natural aptitude; for some of the men that I have employed that could hardly be considered bright, always had the cattle in thriving condition.

Prices.

The high price of butter is holding a number of dairies in business that are just able to live. I look to see in the near future many cows going to the butchers. The least drop in prices will certainly cull them out. That is one of the difficulties of all farming business, let it become unduly profitable to those already in the field and at once it is filled with a lot of people, who quickly bring down the prices. The law of competition always seems to work in the farmer's markets and they never take the step further to combination. It is a pity that neighbors can not trust each other when they will trust the bank or any other institution that is composed of men as honest from policy and as honorable from principle as their neighbors.

Time To Cull.

This is the time for culling out the poor cows. With butter fat at thirty to thirty-six cents a pound, the poorer cows can be dropped without feeling it in the creamery check. No cow should be kept that will not bring in ten dollars a month at present prices. She ought to do better than that. As long as the poorest cows are kept in the herd, the actual tendency is downward. The dropping from age and losses from disease or injuries is not lessened and there is nothing to increase profit. This is coming more and more to be realized by the commercial dairymen. The men that are buying registered cattle today are not the wealthy men that made it a fad some years ago, but the regular dairymen. I have noticed the great number of Swiss names among the transfers of cattle made in California by the associations and clubs within the past year. This is wise, for the uselessness of a poor cow was never more fully shown than at present, yet the temptation to hold her until the next calf is often too great.

Anthrax Cure, Milk Fever Outfits. See O. J. Weber Co., 225-227-229-231 East Sixth street, Los Angeles.

Babcock Testing.

I am glad that the boys are being taught in the Fresno schools to test cows. It will not be long before their services will be available to help the dairymen. I know of nothing that would help a boy more than this knowledge on the road toward being a practical dairyman. I hope to see the boys using their Friday evenings and Saturday mornings in making tests for the farmers. It could be made a paying business. The small hand-testing machines cost only a little. In buying, however, it is well not to have too small an outfit or the work becomes tedious. The six-bottle sizes are catalogued at nine dollars, while the twelve-bottle size is quoted at fourteen. They are good iron framed machines. They come cheaper in the lighter makes but are not as durable.

Figuring it Out.

Take a pencil and figure out the actual cost of the cows in the herd as a basis from which to cull out. This is done somewhat after this manner. One milker milks twenty-five cows. As he feeds the calves too, this item can not be separated very well, so we will consider the cows as good mothers, willing to carry this cost. The milker's wages are forty dollars a month and his board fifteen, making him cost fifty-five dollars. Feeding: Alfalfa hay ten pounds, and silage forty pounds, costs four and a half cents a day, grain five cents, waste half cent, making a total for feed of ten cents a day per head, or three dollars a month. While in the winter it may run a little over this, I do not think by the year that this is too little. Ten cents a day for feed, or thirty dollars a month, cost of milking two dollars and eighty cents, cost of stable cleaning and gypsum in stables one dollar a month, total of six dollars and eighty cents a month evpenses for each cow.

Returns.

Now if the cows are giving a pound of butter fat a day, at thirty-four cents, we have ten dollars and twenty cents total from fat, or a profit of three dollars and forty cents for butter fat alone. The twenty-five cows should produce one hundred gallons of milk a day or about seven hundred and fifty pounds of skim milk. At the present price of grain this is worth twenty cents a hundred or one dollar and a half a day, or about six cents a cow. The amount of butter fat has not been made high and there are common cows around us doing this well at the creameries. The carefully selected herd of dairy cows will do better than this. The calf is not counted in this as a return. If added to the cow's account it brings it up a little. If the stock is full-blooded registered stock, the calves can be counted at $100 each when yearlings. After the expense of raising them is taken out, as well as registering them, it leaves about seventy dollars to add to the cow's account.—M. E. Sherman.

No other branch of agriculture presents more advantages than dairying—disposing of the products of the farm as milk and butter-fat. When the latter may be sold to creamery stations and the skim milk fed to calves and pigs along with alfalfa the profits are greater than from almost any other form of agriculture. No other business tends so rapidly to build up the fertility of the farm, and, when judiciously conducted, no other branch of farming yields more satisfactory financial returns. Raising and feeding alfalfa will add from 15 to 30 per cent to the profits of dairying over the use of any other feedstuff that may be raised or bought. The profit problem for the dairyman is constantly to find the feed that will decrease the cost of his production.—From Coburn's "The Book of Alfalfa."

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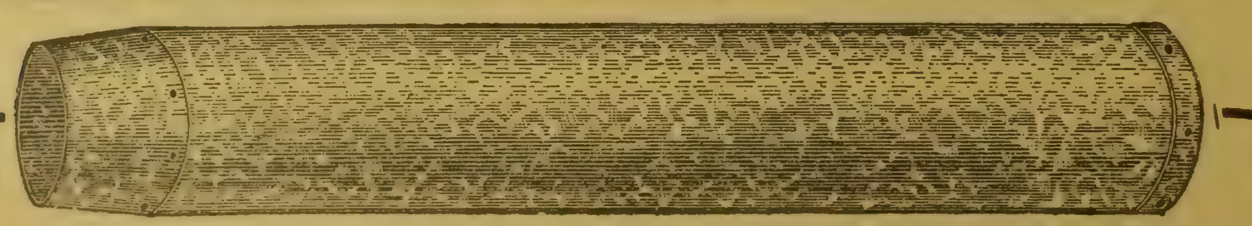

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POPULAR POLAND CHINAS.

Among California breeders the Poland China breed of hogs is quite as popular as it is in the Ohio Valley, where history places its origin and development. Describing it, Coburn in his "Swine in America" says that it is a large breed hog, weighing at maturity, alive, 500 to 1,000 pounds. It has reasonably early maturity and is much liked throughout the corn-producing sections of the United States. For crossing by other breeds the Poland-China sows have a popularity not surpassed by those of any other. They have the hardiness, docility and good feeding qualities that breeders like, and Poland-China sires transmit these qualities to their get from sows of any breed. For these reasons by far the greater part of the marketed hogs in the United States have Poland-China blood.

In some ways the refinement of this breed, or rather families of it, has been carried too far, and their breeders are severely criticized for overdeveloping fanciful points to the exclusion or neglect of others more important, resulting in diminished size, vigor and prolificacy; but the tendency at the present writing is to guard against or overcome this by more intelligent management.

Prior to about the year 1870 the Poland-Chinas averaged larger than now, were inclined to coarseness, or sponginess of bone, had much heavier, drooping ears, and were spotted with about even proportions of black and white. Since then the tendency has been to breed them with more black, until now those in highest esteem have identically the color and markings so long characteristic of the Berkshires, viz., solid black, with white feet, white tip of tail, a little white on or about the face and jowl, and occasionally a splash of white elsewhere. Their ears are medium or small in size, but still drooping, and are pliable and silky.

GOAT GOSSIP.

B. A. R. Stocker, San Luis Obispo.

There is a goat in our town that can stand on his hind legs and look down on you over the top of a seven-foot fence. He is not a native son. He was born in Switzerland. He is a Saanen. Does of his kind being entirely too scarce in California, they have crossed him on Angoras. Now, an Angora does not claim to be a dairy goat. It is a different proposition. She can raise her own kid, and then she is through, but her milk is very rich. Well, the doe kids from these first crosses give in their first lactation—hold your breath—three, four and five quarts a day. If you can buy Angoras for two and a half or three dollars, those kids would be worth more than ten times as much. And they may double their yield when mature.

The big Saanen is being used here for the best milch does we have of any breed, including Joggenburg and Alpine. We know of a Toggenburg-Saanen doe which was fresh at eleven months, and now eight months later is still giving two and a half quarts of milk. She is a beautiful breedy looking creature. For results there is nothing like a dash of the real thing. There is an old Alpine goat at Paso Robles with a record of eight quarts a day. This milk is worth two dollars; and two dollars would probably keep her three months.

Hats off to the dairy goat!

At our County Fair just now the enlightened management has offered prizes for milch goats—a new departure, for even the State Fair has not yet recognized them.

Secretary James Wilson, of the United States Department of Agriculture declares sugar-beet pulp is the best butter producer in the world. 40c per ton at LOS ALAMITOS SUGAR FACTORY.

In considering the efficiency of brood sows, Henry Wallace gives the following advice: "Go over those that have had pigs the present year and ask them the following questions: How many pigs did you have this year? Were they even in size and form? Were they all good ones, or did you have two or three choice pigs and were the rest quite inferior? How did you take care of these pigs? Are you a good suckler? Are you good natured? Are you a good mother, or are you one of the nervous, fidgety kind, always worrying and fretting for fear somebody will hurt you and your precious piglets? If the brood sow on being interrogated, cannot give satisfactory answers to these questions it is not worth while to scold her or give her a moral lecture. Just turn her into the fattening pen; for there is where she belongs."—From Coburn's Swine

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Jersey breeders of Oregon took advantage of their presence at the recent state fair to organize themselves into the "Oregon Jersey Cattle Club."

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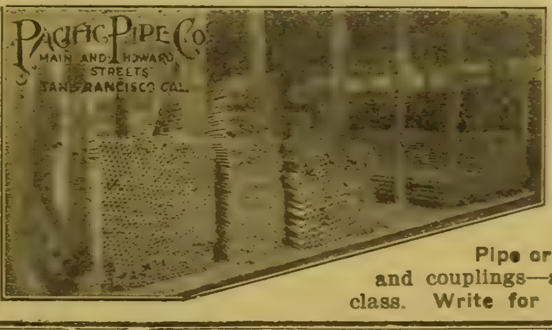

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The Southwestern Poland China Record Association and the American Poland China Record have been consolidated and will operate in the future under the name of the American Poland China Record. This will doubtless greatly simplify the registering of this popular breed. It is said that Poland China breeders outnumber those of any other variety of swine and this concentration of energy in one association will be a benefit to the fraternity.

Spraying

Of all the agricultural implements we presume the spray pump is looked at with the least pleasure. There may be a genuine delight in following the plow and watching the rich soil turning, ready for the planting of seed; likewise with cultivation. But the insect and fungous troubles which come afterward appear as interlopers only and present a problem in farming economy which is nettling rather than inspiring. Some farmers have said that they would wait until the natural enemy of the pest appeared and let nature balance her own account, and there have been instances where they have won out, but unfortunately these are not many.

Some pests cannot be handled within economic bounds by spraying but there are few first class fruits produced that have not had the spray pump called to their aid. A glance at our leading article this week will show that these pests are almost innumerable. Luckily, no farmers have to deal with all of them, but in some section of this state some of the vast number we have chronicled must be conquered or controlled. The wise farmer, and especially the fruitgrower, is prepared to meet these pests when they appear—in the case of the fungous troubls, before they appear.

We believe this issue of the Cultivator will be invaluable to the forehanded farmer if it is laid away where easy access may be had to it. Most of the formulas are quickly prepared once the directions are secured.

This calendar has been prepared with considerable labor, and we take this occasion to express our appreciation to Mr. E. O. Essig of Santa Paula who has aided very materially in correcting and in furnishing much of the material. Mr. Essig is one of the younger of the horticultural commissioners of this state, and his conscientious and painstaking work will win for him recognition in a larger way than he has yet secured.

Farm Help Problem

The question of farm labor has been one of the most perplexing confronting California farmers, and not only farmers in this state but in all sections of the East. In California the "blanket man" represents the usual farm laborer. That there are many farm laborers of the higher grade goes without saying, but the rank and file have, as a rule, proven unsatisfactory. For this reason, many employers have turned to Oriental labor and claim that this class is more satisfactory than the American laborer of the ordinary traveling class.

Unsatisfactory results of efforts to use American labor may be charged to the laborer, but is it not worth while to discuss for a moment whether or not the employer may not be himself in a measure at fault? The bunkhouse method of housing labor has been condemned many times, and the self-respecting laboring man has been many times humiliated by his treatment by his employer. While admitting that the taking into the home of such people as ordinarily carry their blankets from ranch to ranch is out of the question, at the same time is there not some way to provide the self-respecting laborer with decent and homelike surroundings?

On this point, Mr. Geo. D. Kellogg, in a letter of regret that he could not be present at the Farmers Week program at Davis, said: "Every ranch should have comfortable quarters for the help. I have followed the plan of employing white help and they have been given comfortable quarters and become identified with the neighborhood, supporting its churches, schools and society. This worked well and gave me most efficient help until these helpers obtained ranches for themselves and became permanent citizens."

Perhaps the employer of Japanese labor can say that his help sometimes become permanent citizens of the community, but unfortunately not to the upbuilding of the community, for where a Japanese remains and takes up his own garden operations the social life of the community, from an American standpoint, has not been elevated.

The Pomona plan has been spoken of by the Cultivator before and has been followed there for years. It is the result of circumstances rather than a definite plan. It is simply this, that the industries are so diverse that the small home maker finds employment for members of his family in nearly all seasons of the year. The section is more largely a citrus producing one, but there is a sufficient quantity of deciduous fruit produced so that a large cannery gives employment for many people the summer through. In addition, many driers work up both apricots and peaches. These activities fill the summer, while orange packing, olive pickling and other lines give abundant labor during the remainder of the year. We presume there are fewer oriental laborers in Pomona than in any other producing section of equal magnitude. As a consequence it proves one of the most attractive home places in California.

A little concert of action following thorough investigation of possibilities should bring a similar condition in other localities.

Frost Protection

The wise orange and lemon grower is placing his orders for frost protectors, fuel, and appliances for handling it. In fact, many orchardists have already stoves distributed and filled, ready for the unwelcome visitor. We have seen in the orange sections many years ago weather which caused bursting of water pipes on the 2nd, 3rd and 4th of Noveml Such weather at that season is exceptional. However, in all our citrus growing districts that kind of weather is "exceptional" at any time of the year. It is just that condition which the grower must prepare for if he expects the greatest success.

On this point we wish to refer to a remark made by Mr. G. E. Rowe of Grand Rapids, Michigan, who was one of the judges at the Watsonville Apple Annual. Mr. Rowe said that he had noticed that apple or peach orchards which were plowed a month before blossoming time, then put in best of tilth, were almost invariably exempt from injury by frost. He noticed it especially last spring at the time of the most severe freeze the fruit districts of the East have suffered in years. He spoke of one orchard in particular adjoining one not plowed until after the frost had passed, the latter having no fruit whatever, while the plowed orchard bore an immense crop. All other treatment of the two orchards was almost identical. We do not know that these conditions would obtain in an orange grove, and where green manuring is practiced this treatment would be impossible, but for those who do not practice green manuring it might at least offer an interesting experiment. Mr. Rowe's idea is that with the deciduous fruits, cutting of the roots prior to blooming long enough for a callus to form over the broken ends and for new roots to start, puts the tree in better condition for resisting injury. In fact, it is well known by all orchardists that if a tree is in good thrifty condition, the fruit on it is less liable to injury than on one which has been indifferently cared for.

But above and beyond that preparedness with fuel to directly combat the cold is wise.

Buy Early

We hope the present issue of the Cultivator with its invaluable spray calendar will be filed. It will answer many a question in the future and prove of double value if where it can be turned to quickly. Another issue in the near future will likewise be one of exceptional value. For some weeks we have been in correspondence with nurserymen and have asked them to answer a series of questions as to planting and early care of nursery trees. We have these answers in hand and they will be used soon.

The planting season is approaching and it is none too early to have matter of this kind in our columns. Likewise it is time for the orchardist who proposes to plant to engage his trees. There are but few nurserymen who cannot at this time supply any tree which may be desired, but the planter who waits until midseason or well towards its end and then rushes to the nursery for his stock may be compelled to take "something just as good."

If our readers will note the columns of the Cultivator these days it will be seen that a large amount of excellent reading is being furnished at $1.00 per year.

Florida's Output

W. C. Temple, President of the Florida Citrus Fruit Exchange places an estimate of 4,000,000 boxes on Florida's output of citrus fruits for the coming season. He divides it as follows: "Ordinary commercial run of oranges, 2,000,000 boxes"; "Valencias, Tardiffs, Tangerines, Pineapples, Kumquats, Lemons and other fancy and various fruits, 750,000 boxes;" "Grapefruit, 1,250,000,000 boxes." This estimate we take it was made before the recent hurricane which caused immense damage in some sections. So far as we can learn this was not so great in the orange growing districts as in some others. One estimate has it that the loss will be between ten and twenty per cent of the citrus fruits.

Reports from market centers go to show that the first Florida fruit received is altogether too green. Prices at Cincinnati range from $2.00 to $2.75. Grape fruit is meeting better reception and commands for 80's, $2.50 and for 64's, $3.25 to 13.50.

Insecticide Act

The committee formed in December, 1907, at the Chicago meeting of the Association of Economic Entomologists was called a standing committee on insecticides. This committee believed that through the Pure Food and Drug Act or a special act, chemicals used for insecticides and fungicides should be guaranteed through analysis as to their purity of content. The work begun at that time was carried to completion or rather well on the road to completion in an act called the Insecticide Act of 1910, passed by the last national legislature. This measure goes into effect on the first day of January, 1911, and will regulate the standard of insecticides and fungicides in so far as interstate commerce is concerned. Some states have legislation of their own covering this point, but this national enactment will give additional protection even in these states. It is probable that further state legislation will not be needed for the national law should be sufficient.

The Cultivator acknowledges the receipt of a copy of the second and revised edition of Prof. Wickson's "California Vegetables in Garden and Field," a volume of some 350 pages, which ably discusses the best thought and practice in California vegetable growing—an industry which has gained much in commercial importance during the past few years. In scope and cultural directions the work is peculiarly well adapted to meet California conditions of soil and climate, thus rendering it indispensable to all producers of garden crops, whether commercially or only for family use. Price $2.00. Copies are to be had at the office of The California Cultivator.

The Department of Agriculture is taking cognizance of the demand for school work along agricultural lines and is issuing Bulletin 408, "School Exercises in Plant Production," by Dick J. Crosby. These various exercises bring to the pupils information as to the absorption of moisture by plants from the soil, how they get food from the soil, how they give off moisture from the leaves, how the water rises in the plants, and so on, with a series of over 46 exercises. The bulletin has 48 pages, fully illustrated, and may be had for the asking.

Agricultural News Notes of the Pacific Coast

Northern California

Bend, Tehama county, is curing a very high grade of tobacco.

Sutter and Yuba counties have finished their grape shipments.

Grass Valley is now harvesting its third strawberry crop of the season.

A fruit dryer at Scotts Valley, Lake county, was recently destroyed by fire.

The cheese factory at Bieber, Lassen county, has a daily output of 300 pounds.

State Forester Homans will soon issue another booklet on eucalyptus culture.

Pittville, Shasta county, has tided over the long drouth with a number of artesian wells.

Bean growers in Sacramento, Solano and San Joaquin counties have finished harvesting.

Glenn and Colusa counties are maintaining an exhibit of their products in San Francisco.

Farmers' Union at Live Oak, Sutter county, has 2,000 tons of wheat and barley warehoused.

A new reclamation district has been formed in Colusa county to contain 252 acres of rich land.

The wool growers of Red Bluff sold their clip at the recent sale at prices ranging from 10⅝ to 12 cents.

Paradise, Butte county, is advertising its possibilities as an apple section by holding its annual apple show.

Apple orchards at Mountain House east of Oroville, Butte county, were seriously injured by windstorms last week.

One stock breeder at McArthur, Shasta county, recently sold 500 head of three-year-old steers at nine cents a pound.

The highest price paid at the Cloverdale sale of wool last week was 13¾ cents. Last fall's highest was 16 cents.

A serious forest fire which caused some damage, though finally brought under control, occurred at Stirling City, Butte county.

The government has a force of 50 workmen at work on the Yuba river east of Marysville clearing the brush from the river bed.

The withdrawal of butter from cold storage in the San Francisco warehouses is now the heaviest of any time during the season.

The Butte County Water Users' Protective Association recently elected C. W. Fresher president, and P. J. Baltimore secretary.

The output of peaches from Red Bluff, Tehama county, was more than double that of last year. The greatest number of any variety was of Muirs.

Present indications point to the coming exhibition of the Pacific Coast Horticultural Society at San Francisco, being the most successful ever held by the society.

Farmers at Winters, Yolo county, have an organization in the Mutual Telephone Company which has proved very satisfactory as an association and will now be incorporated.

Central California

Santa Clara Valley reports keen demand for small ranch properties.

The farmers' institute at Dos Palos on the 24th was one of great interest.

Tulare county is now making up full trains of oranges for the Eastern markets.

The Co-operative creamery at Visalia is producing about 15,000 pounds of butter daily.

It is rumored that a Los Angeles capitalist will plant 18,000 acres to oranges near Porterville.

The raisin crop of this year is conservatively estimated at about 25 per cent short of last year.

The Independent packing house at Porterville is receiving material additions and new appliances.

Farmers at Kerman are planning a co-operative telephone company for that section and adjoining colonies.

It is estimated that one-half of the raisin crop will be moved between the present date and the first day of January.

A case of reported glanders near Porterville, Tulare county, has proved after the mallein test to be some other disease.

The cannery at Stockton is now running full time on tomatoes, employing 300 hands at prices ranging from $1.50 to $3.00 per day.

The Farmers' Union of San Jose recently held an important meeting at which an address was made by County Entomologist Morris.

The Dinuba Farmers' Union has been sued by the Consolidated Seeded Raisin Company to prevent use of the Anderson Seeder.

Celery growers on the delta lands west of Stockton are marketing the biggest crop ever for that section. The output will exceed 300 cars.

The Consolidated Raisin Seeding Comany is entering suits against many different raisin companies to prevent claimed infringement on patents.

Tomato crop in Monterey county is abundant this season, selling at 1 cent per pound. There is also an oversupply of hay, but the price is fairly good.

An effort is being made to commence a large distillery at Stockton for the manufacture of denatured alcohol. An expenditure of $100,000 is contemplated.

Contention has been created in the Porterville section by the employment of Hindu labor. Many have insisted that Porterville should be "for white labor only."

The Fresno Republican says that "Evidences of a distinct bear movement framed up to scare off trade from buying raisins now and conducted by several of the 'leading packing firms of the Coast' are coming to light."

Livingston, Merced county, is now engaged in harvesting an immense sweet potato crop. Atwater was formerly the principal shipping point, but Livingston maintains that another year will see her the center of the big industry.

Southern California

Orange county has 167,240 bearing apricot trees.

The Chino Land & Water Co. is fattening 3000 head of cattle on beet pulp.

California has about 5,000 acres of celery, of which 2600 are in Orange county.

San Fernando Valley is now producing some exceptionally fine alligator pears.

Improvements are being made on the Newbert Protection District in Orange county.

The national president of the Farmers Union is to visit the Coachella Valley unions.

A suit involving the validity of bonds isued by the Perris Irrigation District has been filed.

Covina, Los Angeles county, maintains that it is able to produce 2,000,000 boxes of oranges.

Ventura County Lima Bean Growers' Association recently shipped 15,000 bags of beans by water.

With lemons at $13.00 per box, as they were for two or three days recently, the lemon orchardists smile.

Seven hundred acres of land near Brawley, Imperial county, will be planted to garden peas to be raised for seed.

Hesperia, San Bernardino county, has been considered as simply an adjunct to the Mojave desert, but is now producing some exceptionally fine apples.

Chino, San Bernardino county, is producing more oats than heretofore, having used already this season two cars of seed.

Independent shippers have been provided a place for the auctioning of oranges in the market place by the New York Central.

Irrigators of Imperial Valley are still discussing the matter of water rates with the receiver who insists that the former rate is insufficient.

The investigations in evaporation conducted by the Weather Bureau for some months on the edge of the Salton Sea have been discontinued.

The Arlington Co-operative Creamery has been incorporated for the purpose of conducting the creamery at that place. The capital stock is $20,000.

The Lakeview Wool Storage Company has commenced the erection of a wool warehouse at Lakeview with a capacity for 1,000,000 pounds, so arranged that every sack of wool stored can be inspected by the intending purchaser.

The walls are rising for the brick building which is to house the new Delta creamery at Imperial, says the Daily El Centro Press. The building is of brick, 24x40 feet, and on three sides will have a twelve-foot arcade to protect the structure from the sun.

N. B. Smith of Ventura, claims in the Free Press, that from 19,200 square feet of ground he harvested this year, 1938 pounds of Irish potatoes, 1240 pounds of sweet potatoes, 300 pounds of lima beans, 100 pounds of small beans, 50 pounds pink and blackeye beans.

The Coast

Colman, Washington, is shipping fifty cars of apples.

Portland prices on hops are running between 10 and 12 cents.

Spokane reports thirteen cent hop sales, with an evident upward trend.

A three-day fair at Chesaw, Wash., closed last week with large attendance.

Cheaper freight rates on wheat is the cry of farmers at Walla Walla, Washington.

Yakima, Washington, shipped over 1,200 cars of apples during the month of October.

The Territorial Fair of Arizona is to be held in Phoenix the week of November 7th.

One thousand men are employed in building an irrigating canal in southwestern Idaho.

School gardens are an adjunct of practically every school in the Hawaiian Islands.

Many potatoes were seriously injured by frost near Tacoma during the last of October.

Walla Walla, Washington, has shipped during the past season 1,312,000 bushels of grain.

The Mababai ranch of 400,000 acres in Mexico, near Douglas has been sold to a British syndicate.

A drainage canal nearly 19 miles long will reclaim a quantity of land at Chewelah, Washington.

Columbia county, Washington, shipped 50,000 sacks of potatoes at $1.35 per sack within one week.

The C. M. Co. is now growing some 2,000 acres of sugar beets over the line from the Imperial Valley.

The Wenatchee Commercial Club is packing its exhibition fruit for the National Apple Show in Spokane.

Grape growers of the Columbia and Yakima Valleys met at Kennewick, Washington, in annual convention.

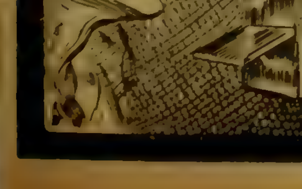
Sheepmen at Boise, Idaho, have been fined for violation of federal laws as to pasturing in forest reserves.

Thousands of acres in the Arizona forests have been restored to entry by a recent ruling of the Department of Agriculture.

The Secretary of the Interior has withdrawn 3840 acres of land in Western Utah as a site for the Strawberry Valley reservoir.

There is a project to build an immense dam 700 feet high to store the waters of the Colorado River in the Grand Canyon and develop a million and a half horsepower.

That the public may know something about the agricultural resources of Colorado and New Mexico is the raison d'etre of an attractive publication, "The Fertile Lands of Colorado and Northern New Mexico," just issued by the Passenger Department of the Denver & Rio Grande Railroad. The Agricultural advancement in that section of the United States is so marked from year to year that it has been necessary to publish eleven editions of this pamphlet in order to keep pace with the steady development of the various districts.



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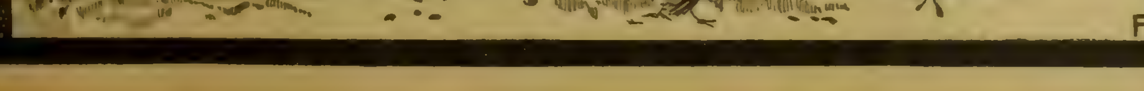

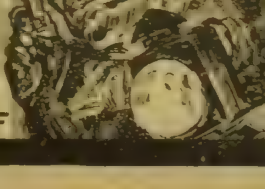

Coulson's

EGG FOOD

If you were going to erect a large building, you would consult an architect—if you wanted some legal papers drawn up, you would go to a lawyer—because these men have made a special study of their respective professions.

The same principle applies to the feeding of your chickens. Presumably you have not the machinery or formula for making an egg food so that it will be just what your hens need.

That's why you should buy COULSON'S EGG FOOD. It is the result of years of study—it is scientifically mixed by experts with the right proportions of the various ingredients to give a balanced ration.

COULSON'S EGG FOOD means a healthy stock, with great laying powers and eggs of quality. Saves you the time of mixing—provides a better feed—makes more eggs—means more profit, as COULSON'S EGG FOOD more than pays for itself, through making hens lay to their full capacity.

It is especially advantageous to use it at the present time, when the price of eggs is beginning to increase, and when also you are anxious to have your hens in good condition for the molting season.

Hens eat only what they like, but there are many foods they must have, and which must be mixed with their regular food so that they get the desired quantity. The only way the food can be mixed is by improved machinery—that's why you should feed COULSON'S EGG FOOD.

Get it at your dealer's; anyway send for our Catalog which tells about the famous Coulson products and gives valuable information about Poultry Raising.

Coulson Poultry & Stock Food Co., Petaluma
Germain Seed & Plant Co.,
Distributing Agents for
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The worst thing we have to contend with in getting new customers to try

West Coast Egg Food

is the "stuffs" that have been put on the market called "egg foods," largely composed of unsound grains, mill refuse, and cheap, very cheap, Japanese rice bran and such offal. When we once get a trial of "West Coast" we have no further trouble. No such stuffs in ours. We are winning out in great shape by making first-class feeds at prices as low as those "cheap" ones. Try "West Coast" just once. 75-lb. sack only $1.80, or $45.00 per ton. If not sold by your dealer, send to us. Or, if you are distant from Los Angeles and have good grain products cheaper than to ship them in, you can make your own Egg Food as good as anybody's.

Egg-More Booklet

tells you how. It is free. Send for it. Send us addresses of 5 persons in your vicinity who have fowls, and we will send you an Anchor Egg Separator. Or, for 20 addresses, we will also send The Poultry Manual, a book well worth 50c, both postpaid.

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PROTEINA WILL DOUBLE **EGG-PRODUCTION**

A prominent Poultry raiser writes us that in one week's time Proteina increased the egg-yield over 50% during the month of October.

EVERYTHING FOR POULTRY

POULTRY BREEDERS SUPPLY HOUSE
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Successor to the Henry Albers Company

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Practical Poultry Culture

STANDARD OF ROCKS AND REDS.

Please give standard requirements as to Buff Plymouth Rocks and Rhode Island Reds.—Subscriber, Tulare.

We quote from Perfected Poultry as follows:

Buff Plymouth Rocks.—The Plymouth Rock male must have an evenly poised body, centering from the thighs and shanks. The demands of shape are for a long, broad, moderately deep, well-developed, well-rounded formation, with a medium long keel, well-developed abdomen, the back to be covered closely with feathers, which build up a rising incline or concave sweep to the tail, with a moderate fluff development about the abdomen. In color the Buffs should have a true, even shade of golden buff throughout their entire plumage, this to be free from shading, shafting, or other imperfections. Every feather in the body, including the wings and tail, should have this true, even, buff color. If any shading at all of color is permissible, it should be confined to the flights and the main tail feathers. The less of this, the better, for the desirable color of plumage is one even shade of golden buff throughout. Beaks and shanks, rich, attractive yellow; eyes, bright red; comb, wattles and ear-lobes of all Plymouth Rocks bright, attractive red; comb formation even, smooth, of fine texture, evenly placed upon the head, the high point in the center, grading gradually away from the center, front and rear, forming a handsome, evenly serrated single comb, which does not exceed five evenly placed serrations, dividing off a well-constructed point or section of the comb. The top color of the male Buff Plymouth Rock is always richer and more brilliant than the under-body color, or the surface plumage. Under-color to the skin, including the entire shaft of feather, buff, or a shade that does not show shafting in the feather.

Rhode Island Reds.—The Single-combed and the Rose-combed Rhode Island Reds may both be described as having a broad, deep body, of medium length. The length of the body indicates fine egg-production. They are rather low built, heavy set, having equal poise of body front and back of shanks. The color of shanks and toes is yellow or reddish yellow; beak, the same; comb, face, wattles and ear-lobes, including the eyes, red; main tail feathers, including the sickles, black, having a greenish sheen; coverts, mainly black, powdered with red; surface plumage in males, top color, rich brilliant red, breast and under-body color, not so brilliant as top-colored plumage. In the color of the male or female no color should appear but the rich red with the black shadings; no white permissible. The plumage color of the female is of a lighter shade of red and more even throughout than the color of the male; the under-color of both male and female is red or salmon; the tips of the lower hackle feathers of the female should have a black ticking, not striped or laced; the wing primaries in the male and female, black; upper web, red; secondaries, lower web, red; upper web, black. In the male, wing-bow and coverts, red. The main tail feathers of the female, black or greenish black.

PROFITABLE AGE OF FOWLS.

The question as to which is the most profitable breed of fowls is very frequently asked. There are undoubtedly differences in breeds, but undue importance should not be placed upon breed. The trap nest has shown that there is more difference in individuals than in breeds. We must get away from that idea in poultry keeping. If a man starts in the poultry business with the "best breed," as he believes, and has with it the notion that breed is everything, he will meet with inevitable failure. The breed may be all right, but the fowls must be encouraged to do their best by good care and management.

When eggs are firm at 40 cents per dozen and the hens fail to respond, the owner is likely to become unreasonable and take up with another breed. And most likely the fault was not in the breed. The fault is usually one of two things: Either the hens are of a poor non-producing strain of the breed, or the management is poor.

It is a point in management that I wish to speak of here, one point of many that must be taken into account if poultry keeping is to be made a success. It is a question of the most profitable age of the hen. Poultrymen who have kept in touch with poultry investigations during the past few years are pretty well informed on this point, but the importance of this subject is not yet generally appreciated. The writer carried on for several years at the Utah Experiment Station a line of experiments with the object of determining the value of the hen at different ages for egg production. The same hens were kept year after year under similar conditions and a record was kept of production.—James Dryden in Coleman's.

FACTS ABOUT BREEDS AND BREEDING.

There is no foundation for the theory or belief that certain varieties of fowls are more hardy than others. It is true, however, that not all the foreign varieties take kindly to our climate; but if the breeding is right, we can build up a rugged race out of almost any known breed. Breeds are often condemned for lack of hardiness when the fault really lies at the door of the breeder who has used injudicious methods.

Properly to select and breed the stock is an important secret, and in this particular the writer can present information that will be useful to poultrymen.

In originally buying the stock it is important that it be obtained from a reliable party, out of a well-established "strain" of its class, noted for hardiness and good, strong utility qualities.

You must satisfy yourselves that the specimens purchased are not related, as, for instance, brothers and sisters. There is not so much danger if the chicks chosen are from eggs laid by different hens of the same variety, though bred to the same cock, but the chicks must be of a thrifty nature.

The more remote the actual relationship is, the better, as the offspring from birds bred too closely, in this respect, hardly ever prove so satisfactory as those secured from stock of both sexes that are not nearly allied in kin.—Poultry Secrets.

POULTRY POINTERS.

Kerosene the roosts.

Have regular feeding hours to feed.

Dampness is to be prevented at all times.

A liberal use of whitewash is beneficial.

One bad egg is a thorn in your reputation.

It is what you feed that counts in results.

As the weather gets warm lesse the feed of corn.

Millet is a good feed to put in the scratching litter.

When the chicks' wings begin to droop look for lice.

Rats are a bad thing when they take quarters in the poultry house.

In breeding be careful not to dro utility points to get standard.

A little linseed meal in the soft feed once in a while is very beneficial.

The character of the food ha much to do with the quality of th eggs.

Always have plenty of grit befor your fowls. Remember it is the teeth.

High feeding and lack of exercis are the cause of a good many infertil eggs in the spring.—Green's Fru Grower.

Poultrymen, Attention

We want to tell you what we are doing. We are erecting at the present time Yards and Pens for the largest and most up-to-date plant for fancy poultry in Southern California. We can carry on hand with our new yard about 3000 birds. We sell every standard variety, of Pullet, Cockerel, Laying Hens and Cock. We have them on hand EVERY DAY OF EVERY WEEK OF EVERY YEAR. We have been in the Hatching business for 12 years in the west. The Pioneer Hatchery has been established for several years, and from a small start is now the largest baby CHICK DEALERS IN THE ENTIRE WORLD. No order of any kind in the Poultry Line is too large for us. If you want to sell 100 or 1000 hens or more we will be glad to bid on them for spot cash.

We are shipping at present about 7500 baby chicks per week, of the Reds, Minorcas, Leghorns (White and Brown), Barred Rocks, Buff Orps., etc. Whatever you need in our line we will be glad to make a price on. If we can't sell you better poultry for less money, don't buy from us. INVESTIGATION is all WE ASK.

The Pioneer Hatchery Co., 108, 112, 114, 116 East Eighth
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Reference: Any Poultry Paper in the West

A Healthy Chicken is an asset; a sick Chicken is a liability: because it is apt to give disease to others. it's therefore a loss, not a gain

To keep your poultry healthy—to make every hen an asset, regularly use in the feed twice a week,

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No. 3 Condition Powders

Give it to well chickens to KEEP them well, give it to sick chickens to MAKE them well.

Helps chickens to digest and assimilate all their food, makes hens lay right up to molting and starts them laying quick after the molting season.

At your dealers. Write for our catalog of Poultry Products.

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Fred Dye and J. L. Fredricks, Props.

WINSLOW'S REDS EXCEL Single Comb RHODE ISLAND REDS Monrovia Cal RED FEATHER POULTRY YARDS

WINSLOW'S REDS

The great prize-laying prize-winning strain of Rhode Island Reds.

Write for prices.

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Proprietor
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Monrovia, Cal.

"Chicks well hatched are half raised"

CHICKS

White and Brown Leghorns
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Cheapest and most efficient water supply for country place, irrigation, farms, etc. Satisfaction guaranteed. Booklet, plans, estimates free.

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At the present time, some of the largest Poultry Raisers of California are using Merval and are all delighted with the results.

If you have sick chickens, get a can from your Dealer or send us $1.00 and we will forward you post paid a 1 lb. can.

Do it now. Remember, Merval wont cure dead birds.

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See out famous extra select white leghorns. The fnest white leghorns there are. Sold 2000 last month.

$15.00 per dozen.

We carry the largest and finest assortment of laying hens and pullets in California. We sell 2000 grand birds every week. Ship everywhere. Don't miss our new catalog. Free. Contains the most valuable poultry secrets. Lowest prices. Highest quality. Baby chicks in any quantity.

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Single Comb Black Minorcas (Northrup Strain), R. I. Reds (Tompkins Strain), also trio White Minorcas, and Rose Comb Black Minorcas.

Eggs for hatching and baby chicks.

C. U. Chamberlin, Los Gatos, Cal.

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HARVEY BOLSTER SPRINGS

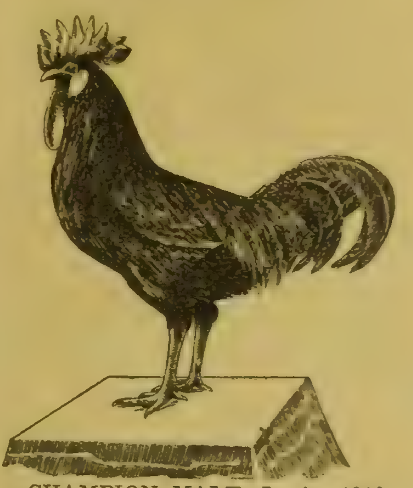
Soon save their cost. Make every wagon a spring wagon, therefore fruit, vegetables, eggs, etc., bring more money. Ask for special proposition. Harvey Spring Co., [illegible]-17th St., Racine, Wis.

GUARANTEED

AILING BLACK MINORCAS.

We bought two dozen Black Minorcas and have had them now three weeks. They look sickly; one has died. They seem to have been almost starved, but where placed there was all kinds of food on the ground, since oat threshing and also since corn was threshed. They also were covered with lice and ticks—a flat almost blue black bug that sticks its head in the flesh. A lady advised us to use Conkey's Lice Paint, and to feed them Dr. Robert's Poultry Tonic in a mash of bran and onions.—Subscriber.

See issue of August 11 which has a full discussion of the tick question. Also cover all of inside of houses with distillate or coal oil to wipe out the mites.



CHAMPION MALE, L. A., 1910.
Lovell's Black Minorcas.

CAUGHT ON THE WING.

Once a week, at this time of the year a little Epsom Salts should be added to the water, and twice a week a small piece of sulphate of iron, the size of a small bean, to every pint and a half of water. This will help to keep the birds in a healthy, active condition.

By placing eggs in cold water for twelve hours they become unfertile. This hint is no doubt useful to persons who have a special breed, and not sufficient orders for eggs and settings.

Whatever the kind of food, it is imperative that meals be given at regular times. When a meal is missed on no account give double the usual amount of food at the next feeding time.

The exhibition stock should now be weeded out, disposing of those which are faulty, and pay all attention to those which bid fair to do some winning.

Maine has the credit of raising the first "crowless" roosters. Alton, Ill., now comes to the front with "wingless" fowls. It remains for some one now to produce a hen without a cackle and scratch machine, and the three bred together will produce a ne plus ultra to please even the worst hen haters.

A little sprinkle of grit is sufficient for chicks at first. If given the chance they will fill up with it and die.

Ducklings should have fresh water often, as their feeding and drinking at one time mix feed and water and make water foul. Waterfowl naturally love to liquidate their bills, whether you do or not.

State inspectors condemned 13,000 pounds of cold storage poultry found in a Seattle refrigerating plant. It was sent to a "fertilizer" factory.

It is wise to remember when those turkeys hatch that they are semi-wild. Every year some farmers report failure. They do not change their stock nor methods. They kill them every year with the same old dope—sloppy cornmeal and red pepper. It's like a man tearing his pants on the same nail every time he enters the barn.

When a man sets out to beat a hen at her own game, he is pretty apt to come out of the struggle a little bit doubtful as to the result. A woman can do such things firstrate. She doesn't go at it with a club, but with a bit of corn in her apron.

Go In and Make Money

Poultry offers the surest, easiest way of anything that's open to you. Don't waste *all* your time considering. Go in and *make* it win.

I have started over 61,000 people the Queen Incubator Way. May I do the same for you? Get my offer on

The 1911
Queen
Incubator

The Incubator that makes money for poultry raisers. Take one and try it for [illegible] or more days and prove for yourself that it is the hatcher I claim it to be. I take all the chances. *I pay the freight,* too, and give a [illegible] year guarantee now. It is my way of showing people what they can accomplish with Queens.

Get the 1911 Queen Book

The New Queen Poultry Guide and Catalog is larger and finer this year than ever. It tells how to make money with poultry and how to get a Queen Incubator on the most generous terms ever offered. Let me send you my great book to tell you about Queens and Success. An infallible guide—no other book like it. *Free and postpaid.* Address

Wickstrum, The Queen Incubator Man
Box 53, Lincoln, Neb.

EGG MAKER

I Have Ten Hens and Get Ten Eggs Each Day

by feeding "Lee's Egg Maker." Without waiting another day, go out and count your hens—count them carefully. For a week keep an accurate daily record of the eggs you get. The guarantee below means *you.*

WE GUARANTEE

that no matter what you are feeding, and regardless of the number of eggs you are getting at the present time, if **Lee's Egg Maker is added** to the daily ration—made a portion of it—the increased egg yield resulting therefrom will more than pay the cost of the Egg Maker, cost of labor required, and **100 per cent profit** on said labor.

We don't care what your hens are doing *now,* we ask you to buy Lee's Egg Maker on our *guaranty* of an *increased* egg-production at a *reduced* feeding cost. Could we make you a better proposition?

The amount of good *digestible* protein is what counts for results in poultry feeding, and America's big feeders say Lee's Egg Maker contains more *digestible* protein than any other poultry food they can buy.

Lee's Egg Maker is almost entirely a meat food and with an actual tested protein feeding value in *excess* of *80* per cent, and you'll find in it the essentials entirely lacking in other prepared poultry food. The best feeding authorities in the country endorse it—and *use it.* *You* can't afford *not* to feed it, whether you have 10 hens or 1000, the proportionate profit would be the same.

Price: 2½ lb. pkg., 25 cts., 25 lb. pail, $2.50. Ask your dealer or send direct to us. We pay freight in 100 lb. lots.

Come in and see our new 1911 line of Mandy Lee Incubators and Brooders at our newly opened Los Angeles branch, 225 West 2d St.

GEO. H. LEE CO.,
OMAHA, NEB. LOS ANGELES, CALIF.

The Arenberg Brooder Stove

Proven to be the most successful Brooder Stove on the market. Awarded gold medal for most Meritorious California invention at California State Fair, Sacramento, September, 1910. Burns distillate, perfectly simple and easy to manage. Write for details. **H. F. ARENBERG, Petaluma, Cal.**

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You cannot get a good weather and
waterproof roof for your building
from a poor roofing.

The roof of your building is the
most important part of it and
unless your roofing is right, there will
be no peace of mind for
those who live under it.

A roof that leaks causes no end of
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The best way to protect yourself from
these unnecessary troubles, is to
use Malthoid Roofing.

Malthoid Roofing is made in the
largest and best equipped
roofing factory in the world.
The men who make it have been
making roofings for
twenty six years and they understand
what is necessary to make a roofing
which will give perfect satisfaction,
no matter how it is used,
where it is used or
under what conditions.

The makers of Malthoid Roofing
guarantee it to be a perfect roofing—
to give perfect satisfaction and to
last as long as the building it covers,
provided it is properly laid and
ordinary care is taken of it.

Twenty six years of experience enables
the makers to guarantee
Malthoid Roofing
under these conditions.

To be absolutely sure that you have no
roofing troubles, buy
Malthoid and lay it properly.

It's free

Send for it. A new and valuable book on the **"Care of Roofing."**

No matter what your experience has been or what roofing you have used, this book will enable you to take better care of it. Sent free.

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San Francisco and Everywhere

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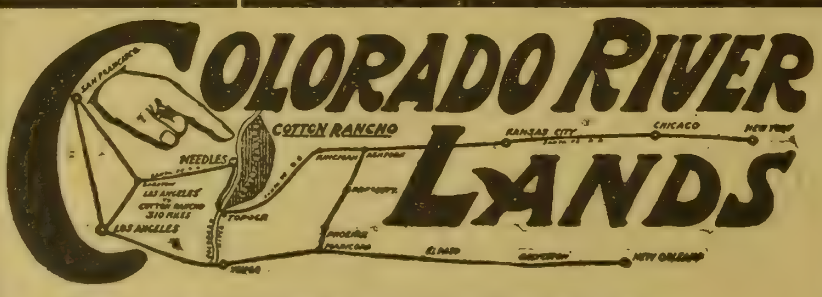

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The home of alfalfa, cotton, cereals, fruits, etc., and all other semi-tropical products.
Price of land $40.00 per acre and up, including share of water stock.
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Fifth Floor Hamburger Bldg.—100 feet above street, noise and dust.
Entire year—enter any time. Get rates. F 1850, Main 2305

Queries and Replies

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Soil for Lawn.

I wish to plant lawn this fall or winter. The land was formerly hog wallow, deep red clay which bakes exceedingly hard after watering. Of course with the lawn seed planted it is impossible to work it. Would layer of loose soil over the top be advisable, also fertilizer, or is sand preferable?—Subscriber, Visalia.

Hog wallow land is liable to be underlaid with hardpan, and we would advise investigation as to this point. If there is hardpan present, it should be broken up so as to allow drainage. This could be done by deep sub-soil plow or by using sticks of dynamite. As to surface, would advise placing of a few inches of rich loam soil over the top. Then after the soil is settled or worked so that any unevenness may be determined and leveled before seed is put on, the surface should be fined and seed applied on the good top soil. The very lightest raking in is advisable. Some prefer to drag brush lightly over the surface rather than to use rake. Still further advantage may be gained by applying over this seed a very light coating of fine dry mulch from corrals. This must not exceed one-half inch and less is better. This prevents drying of the surface and permits the seed to come through. In the warm weather the surface should be sprinkled twice daily.

Eucalyptus Trees.

Can you inform me as to care of eucalyptus trees, when to trim them, and cultivation necessary?—Subscriber, Santa Rosa.

The care of eucalyptus trees depends so much upon circumstances, soil, available irrigation, etc., that to answer such a question without further particulars would require much space. We have seen eucalyptus trees planted on rocky hillsides, set very deep, that did well without further care. Again, we have seen them killed out on richer lowlands where a little irrigation that first year would have kept them alive and they would ultimately have made strong growth. If they are planted on level land where they may be irrigated and cultivated the first two or three years but little care will be needed. As to pruning, if grown for timber purposes, if planted close together, say 8x8 feet, the side limbs will be automatically pruned off and they will grow straight, trim trunks which will make good poles and after they are thinned out for poles the rest will make good timber trees. If planted in yard or where shade is desired top the first year's growth, also the second, to make them branch out and produce stockier trunks.

Alfalfa Rust.

I mail specimen of alfalfa which seems to be affected with some kind of rust. It is worse in spots but not yet serious. Am also sending sample of alfalfa seed. Can you advise me as to its quality?

The alfalfa leaves were affected with the common alfalfa rust (Uromyces appendiculatus Lev.), for which there has been no treatment attempted which is in the bounds of economic possibility. This rust has never been serious and we do not think our inquirer will have trouble with it.

The seed sent is exceptionally good, showing no dodder and is very plump, and so far as can be judged by looking at it, fertile.

Killing Bermuda.

When should I dig Bermuda grass lawn to re-sow to blue grass?—Subscriber, South Pasadena.

The digging up of Bermuda grass lawn and the re-sowing to blue grass presents many difficulties unless a year or two of clean culture is given. We have seen soil in which Bermuda is grown screened through fine wire screen to remove every particle of root and then the next summer a great quantity of Bermuda grass came up again. If seed is sown at once and continuous work done next summer, the Bermuda might be kept down. The difficulty, however, would be very great. Bermuda's growth is slowest in winter, hence the fall is the best time to sow blue grass seed.

Oil Driveway.

What is the best time to make oil driveway? Is it wise to make it during the winter?—Subscriber, South Pasadena.

We do not think that there is any preference in the season of making oil driveway, except that in summer evaporation is greater. The ground is warm and will take in the oil more rapidly. In any case apply oil very hot and good results will follow.

Picking Live Fowls.

Is it against the law to pick live fowls in California?—Subscriber, Orange.

We are unable to say as to any definite law in this respect, but if needless pain is given to any animal of course the S. P. C. A. would take it up and be able to prevent it.

New Crop
SEED OATS

Genuine
Texas Red Rust Proof
direct from Texas.

Ask us for samples and prices before planting.

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If Interested in Flowers
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booklet, describing some 50 varieties.
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Small Fruit Plants a Specialty
Strawberry plants for fall planting. Ten varieties best adapted to Pacific Coast conditions.
Burbank's Crimson Winter Rhubarb
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Place your orders for trees early

Our nursery embraces over 1500 acres, located in the most fertile and favorable spots in all California for the propagating and growing of first-class nursery stock of every description.

Largest and finest assortment on the coast of deciduous, citrus, ornamental trees, grape vines, palms and roses.

Plant our True-To-Name-Tree

and you will have nothing to regret.

For more than 25 years we have been growing nursery stock in this state, and we believe you will find that our experience and suggestions will be of value to you.

Every prospective planter of trees and vines should have

California Horticulture

The Fruit Growers' Guide

By Geo. C. Roeding

120 pages, 7¾ by 10¾. Beautiful lithographed cover. Profusely illustrated with half-tone engravings and color plates. It not only lists but describes 2000 varieties of trees and plants. Contains valuable suggestions on soil, propagation, planting, cultivation, irrigation and pruning. Price, mailed, 25 cents.

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PAID-UP CAPITAL $200.000.00
FANCHER CREEK NURSERIES
INC
Geo. C. Roeding Pres. & Mgr.
Box 12 Fresno, California, U.S.A.

Blight Resistant Walnuts.

Where may I secure blight resistant walnuts suited to elevation of 1000 feet, level land, deep gravel loam, well drained on western slope of Coast Range —G. H., San Luis Obispo.

Our inquirer is seeking for that which has not yet been found. Many others are inquiring for a blight resistant walnut tree. Some most excellent trees have been found which are to a degree blight resistant, but never one which is completely so. The Eureka, Chase, Neff and others are now growing in various Southern California orchards which are said to be blight resistant. Farther north, the Franquette, Mayette, Concord and some others have been declared desirable. What variety would do best under your conditions it is impossible to say, for that is a question best answered by orchards in your vicinity, if there are any. If not, only actual experience can determine it. In that case, grafted nuts will give quickest results.

Fungus on Walnuts.

Kindly note disease on walnut leaves of Ford's Improved Soft Shell. —Subscriber, Colima, Mex.

These leaves were examined by Prof. Clayton O. Smith, assistant plant pathologist at the Southern California Pathological Laboratory at Whittier. He writes:

"There seem to be several different sorts of spots on the leaves. In fact, at this time of the year when the leaves are old they are a very suitable place for different kinds of spots to develop. In no case is there sufficient development of the disease to show the real trouble, and I could only suggest what might cause the larger brown spots. They might be caused by Marsonia juglandis, which is a rather common fungus on the black walnut and butternut of the eastern states. These troubles are not as a general thing severe enough to require any treatment. The leaf with the many small black spots looks very much like the California walnut blight."

Seed Bed Oranges.

What is the best way to care for seed bed orange trees? How often should they be irrigated and how long does it take them to come up? Are they better in or out of lath house?—Subscriber.

Had our inquirer observed the requested courtesy of signing his communication we would have sent him issue of Cultivator containing particulars he asks. He may find these directions in Cultivator of March 17, 1910.

Tomato Worms.

My tomato vines are being eaten by large caterpillars three inches long, green in color. Worms eat the leaves and fruit. What is preventive or remedy?—Subscriber, McFarland.

The best remedy for these "caterpillars" or worms is hand gathering. It is easily and quickly done and is practically the only safe remedy. Of course arsenical poisoning is possible, but where ripening fruit is on the vines, it is not wise.

Curing Tobacco.

How can I cure home grown tobacco so as to make it mild?—Subscriber, Santa Rosa.

Mild tobacco is not so much a question of curing as of the leaf selected. The first or lower leaves are those which produce milder tobacco. Curing must be done in the shade as the California sunshine is altogether too intense and one gets only a little worthless product as a result.

Franquettes.

Please give information as to whether Franquettes will grow in Southern California. How do they stand blight and at what age do they bear and are they good producers?—J. B. T., Santa Paula.

The Franquette has done well in San Jose and in many parts of the San Joaquin and Sacramento Valleys. In Southern California the few trees which have been planted have, so far as we can learn, been dug up. They grow very thriftily but do not bear

Get out of the rut

Give your buildings the benefit of progress—same as you give the farm itself. Cover every building on the farm with Genasco Ready Roofing—the economical roofing that protects and lasts.

Genasco Ready Roofing

is made of Trinidad Lake asphalt—Nature's everlasting waterproofer. It prevents cracks, breaks, and leaks, and does away with damage and repairs. Easily applied without experienced help.

The Kant-leak Kleet does away entirely with cement and large-headed nails. Keeps seams absolutely watertight. Saves time in laying. Makes a beautiful finish. Ask for Genasco rolls with the Kleet packed in them.

Ask your dealer for Genasco. Mineral or smooth surface. Be sure you see the hemisphere trade mark. A written guarantee, if you want it. Gold medal (highest award) Seattle, 1909. Write for samples and the Good Roof Guide Book.

THE BARBER ASPHALT PAVING COMPANY
Largest producers of asphalt, and largest manufacturers of ready roofing in the world.
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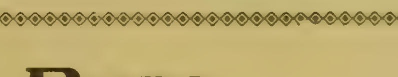
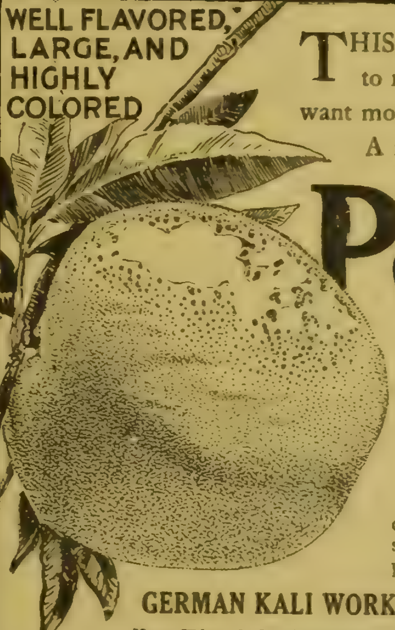
Cross-section, Genasco Stone-surface Ready-Roofing

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THIS is the kind of peach it pays best to raise, because it's the kind people want most and pay highest for.

A more highly developed peach results from an application of

POTASH

In other words—**Potash Pays.** See that your peach orchard fertilizer contains at least 10% of actual Potash. Potash will put new life into your trees.

Send for our latest publication; it describes practical fertilizer tests and shows you how to make a fertilizer profitable for peaches and other crops.

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Meyer Wilson & Co., San Francisco, Cal., are sole importing agents for the Pacific Coast

Pure

Alfalfa Seed

Good crops cannot be grown from weak or foul seed. Many fine stands of alfalfa have been ruined by the love vine and dodder that was not removed before sowing.

We have installed an alfalfa seed-cleaning machine that insures absolutely pure seed, and our stock is selected from only strong and healthy fields.

Germain seeds are not always cheapest in price, but you will surely get a dollar's worth for a dollar and be certain of the quality.

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LOS ANGELES

KIRKMAN NURSERIES

Wholesale Growers of

Deciduous Fruit Trees and Vines

We are also offering a few thousand Citrus trees
and two hundred thousand fine Eucalyptus.

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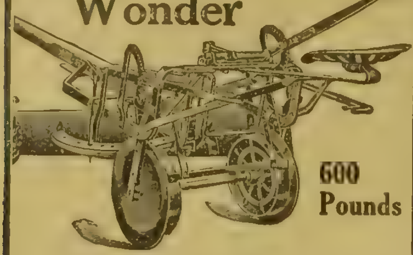
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—masters the most difficult pieces of land—cuts the brush—stirs the soil so it won't need ploughing—levels the land—throws up dikes—digs ditches and maintains your roads.

This grader is invaluable on fruit farms. One man—one team—operates it. The 20th Century is

The Original One-Man Machine

It is all steel and will last through years of hard service.

It does the work of several special machines and adds to your profits.

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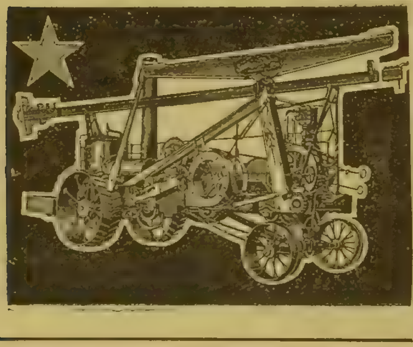
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have stood the test for years in comparisou with all makes, and the very fact that fully 95% of all Portable Machines now at work in the Oil Fields are Star Machines is all the proof necessary as to their superiority for all kinds of Well Drilling.

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Our TRAPPERS' GUIDE is just the book you need, whether you are an old-time trapper or inexperienced. Ask for it. We will send it free. It tells you when, where and how to trap, giving the game laws of every State and Canada. Tells you how to prepare skins, and how to get the most money for them. Reveals carefully guarded traping secrets and gives methods that will increase the catch every time, no matter how long you have been trapping or what your experience. The facts as to Animal Baits have never been published before—are as important to a trapper as traps. Write today for this valuable, but free book.

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Greatest Fur House in the World
540 Fur Exchange Bldg. St. Louis, Mo.

Placentia Perfection Walnuts
Grafted on California Black
Eucalyptus Trees and Seed
Sunset Nurseries, Tropico, Cal.

as does the Santa Barbara Softshell, Placentia Perfection or the many partially blight resistant nuts which are now used for grafting. In Santa Paula we do not think we would plant Franquettes. If grafted they bear at about the same age as the ordinary softshell nut and, as noted, in the sections north, are good producers.

Grain With Alfalfa.

Notice in the Cultivator advantage claimed to be gained by adding grain ration to alfalfa pasture. Would like to know profits from acre of alfalfa or one used as pasturage for hogs; also as to whether lamb feeding has been tried on alfalfa.—J. N. O., Spadra.

While hogs will grow on alfalfa they will not fatten very quickly. We find it pays to push them along by giving a small amonut of grain in order to fit them for the market as quickly as possible. Sows with the little pigs need a little grain but as soon as the pigs are weaned they will grow well if fed alfalfa green or as hay with the skim milk ration. Eight hogs will grow up well to the acre of alfalfa and if not allowed to run on it all the time will probably not use it all. In other words, sixteen hogs on an acre until it is eaten close and then put on another acre will usually leave one or two cuttings in the flush season growth to make into hay. The profits of hogs are like everything else, large, if well handled and prices are high, nothing if disease strikes the bunch or if price drops to three cents on foot. Lamb feeding would pay well, if near enough to large market to secure good prices. The only thing in that case is to find the market. We have on this ranch too much trouble with neighbor's dogs to make sheep profitable in a small way.—M. E. S.

Eucalyptus from Seed.

How may I start eucalyptus trees from seed —O. S., Reedley.

Eucalyptus seeds are planted in flats or shallow boxes four inches deep. Fill these with the ordinary soil well pulverized and let them stand until the next day after having sprinkled it well with a fine nozzled sprinkler. The soil may be too heavy and in that case a layer of sand or fine road dust of half an inch over the top of the heavy soil will help the little trees. Then take a small stick and draw it across the box every inch and sow the seeds i these tiny furrows, water again and the water will wash in enough soil to cover the seeds. Put the boxes in a shady place, well protected from the birds. Water from time to time as the tiny plants need it. When they begin to form the second leaf, go over the boxes with a sharpened stick lifting out any that stand out of the rows and thinning so that the plants stand an inch apart. The plants removed are set at once into other prepared boxes. They are easier raised if the seed is sown in June and the boxes put under lath houses. The only trouble that attacks them is damping off. This comes in wet weather and attacks the plant by drying up the tiny stem and the plant falls over and dies. In September the plants may be potted off into cans and then hardened off in March and planted out in April.—M. E. S.

Bloat.

Cow bloated badly on alfalfa. Had to stick her to save her life. How long will it require for healing? In the future can I use anything in the drinking water which will prevent bloat?—J. H. R., Yuma.

A cow that is stuck with a clean knife never seems to suffer any discomfort from the operation. We put on a little pine tar on the place. This comes in cans and had best be purchased at the grocer's. We add to the cows' feed when they are disposed to bloat much, a tablespoonful of baking soda and also throw a very small piece of lime into the watering troughs. A piece about as big as a walnut to each hundred gallons of water will harden the water without making it too strong for the cows to drink.—M. E. S.

New High Grade Automobiles

at Prices Lower Than the Price of Medium Grade Cars

To Prospective Automobile Buyers:

You naturally wish to purchase the highest grade car you can get for your money, and you naturally want a higher grade car than the dealer can afford to sell you for the amount of money you wish to pay—we will meet your views for a short time.

We have a limited stock to dispose of—all high grade—and all prices to meet the needs of moderate priced car buyers.

Whiting, Davis and Westcott Cars
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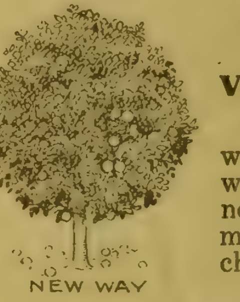
These are not shopworn cars, they have never been driven a mile, and are the latest models received.

We have sold the lease of our garage and have not at present the necessary equipment and room at our store to properly handle automobiles, so we offer you the opportunity to buy a car of higher grade than you ever thought of owning and at a price no higher than is charged for a medium grade car.

Call at Newell Mathews Company, 200 North Los Angeles Street, Los Angeles, Cal., or write us, stating whether you wish to buy a one-seat or two-seat car and we will send you full information or have our salesman call.

Newell Mathews Company



EXCELSIOR TREE SUPPORT

Hooks are made of Flat Steel, 1¼ Inches Wide—6ft. of Wire.

Write us for information especially nice for
VALENCIA GROVES

No sticks to interfere with cultivation, etc. The wire swings on itself and not on the limb. Samples may be seen at the Exchange Packing Houses.

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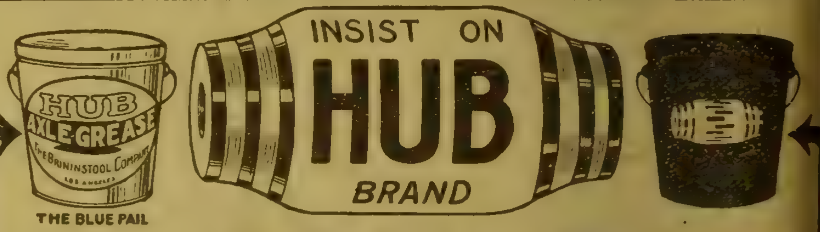

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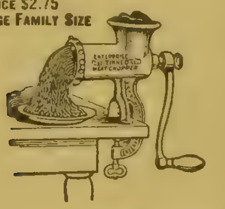

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It is strongly made and every part does its work without a hitch. Plate fits perfectly and cylinder is bored absolutely true. Pressure will not cause meat to rise above plate. The patent corrugated spout prevents air entering the casing, thus assuring perfect filling and preservation of sausage.

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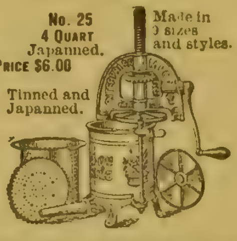

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A necessity to farmers, poultrymen and all who keep poultry. A splendid general, all-round mill. Grinds poultry feed and makes bone meal fertilizer.

Grinds dry bones, oyster and other shells, corn, etc. Pays for itself in a short time. Size shown in illustration (No. 750, Price $9.50, weight 60 lbs.) grinds 1¼ bushels corn per hour.

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We also make other household specialties—all bearing the famous name "ENTERPRISE" — Coffee Mills, Raisin Seeders; Food Choppers; Fruit, Wine and Jelly Presses; Cherry Stoners; Cold Handle Sad Irons, etc., etc.

Ask for them at Hardware and General Stores.

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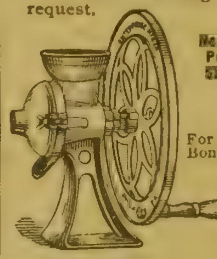
For Dry Bones, etc.



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Household Department

VALUABLE MEAT SUBSTITUTES.

Miss Clara Palmer, at present in charge of the Domestic Science Department of the San Luis Obispo Polytechnic School, supplies the Cultivator with the following recipes, some of which are credited to their originators. These recipes were used in demonstrations made at the University Farm at Davis and those who were there and heard Miss Polmer's interesting talks will appreciate this opportunity of having copies. Miss Palmer has been connected with the school at San Luis Obispo for but a few months.—Ed.

* * *

Whether your decision to join the non-flesh eaters is founded on a principle that it is immoral to be forced into paying unreasonable prices, or on sympathy with your fellow men, who less fortunate than yourself are actually suffering from the present high prices, or on hygienic reasons; if you are going to join the non-flesh eaters you must know how to make such an intelligent substitution for meat in the diet that there shall be no loss of nutrients to the family.

The value of meat as a food to build up and nourish the body is due to three different food principles, protein, fat, and minerals. The youngest and least experienced housekeeper could supply the lack in fat, but let her consider carefully the comparative cost per pound of butter, bacon, lard, oleomargerine (which is fully protected by the pure food law and government inspection); olive oil, which is never cheap but has not advanced in price with increase in cost of other foods; and the oils of nuts and grains which are on the market at lower rates.

Protein being the most important as well as most troublesome food requirement of the body, the substitutes for meat protein involve more difficulty to the housekeeper who has never bothered her head with the composition of foods, but reference to Bulletin No. 28, of the U. S. Dept. of Agriculture, on the Chemical composition of American Food Materials, which may be had by any one for a postal card request, will furnish the necessary information without taxing the understanding of the least scientific.

For instance, considering equal weights, compare the amounts of protein in the following foods and then compare the prices per pound at your own market.

Porterhouse steak contains 19 per cent protein, or a little less than one-fifth its bulk or about three ounces of protein to a pound. The various kinds of cheese in common use range from about 19 per cent protein in Neuchatel to over 31 per cent in American skimmed milk cheese. Oatmeal contains 16 per cent, whole wheat and graham flours about 14 per cent, macaroni and similar products of the gluten flour about 12 per cent, dried beans, peas and lentils vary in protein content from 18 to 26 per cent. All nuts are high in protein, almonds 21 per cent and peanuts 26 per cent having most. Chocolate has about 13 per cent, cocoa (less fat) 22 per cent.

These amounts are computed for the materials as usually purchased, meat with bones, fat and gristle, and it is to be remembered that many cuts of meat have more refuse than the one here chosen for comparison. Nuts in the shell are estimated. For shelled nuts the rate would be very much higher.

Canned beans or peas are not to be compared with the same vegetable dried, as a large proportion of the bulk and weight is water. A can of peas contains less than 2 per cent protein.

From the above comparison it is plainly seen that cheese, nuts, macaroni and dried legumes (beans, peas and lentils) are about equal to, or even exceed meat in the amount of protein furnished pound for pound.

The various forms of macaroni combined with cheese and a white sauce make a dish which may well take the place of meat.

The milk is about 4 per cent protein. Remember cheese is to be added to any dish after the principal cooking is finished, that it may be warmed through and melted only, not subjected to prolonged nor intense heat, which renders it tough and indigestible.

White sauce, 1 T flour, 1 T butter, ¼ T salt, 1 C milk, pepper (white).

Melt butter without burning, add flour and seasoning, stir smooth, add the milk gradually stirring constantly, cook two-thirds minute until the sauce thickens and the flour is thoroughly cooked. Use with escalloped dishes of all kinds. For medium white sauce use two T each of flour and butter. For thick white sauce use 3 T each of flour and butter. (T—tablespoon.)

Cheese Salad. The soft cheese cream or Neufchatel are made into small balls, placed on crisp tender lettuce leaves and served with French dressing. A small quantity of either green peppers, pimentoes or olives, chopped, may be added for variety. Mix these into the cheese before making into balls. The food value as well as flavors and attractive appearance may be increased by the addition of chopped nuts, or a half nut may be placed on the top of each portion of cheese.

Luncheon Sandwiches.

Make sandwiches of thin slices of bread (¼ inch) placing slices of cheese (American variety) one-eighth inch between, sprinkle with a few grains of cayenne. Place on the toasting rack, brown, turn and brown. When both sides are toasted the cheese should be soft and creamy. Serve at once. These sandwiches are sometimes browned in butter in a chafing dish, but the additional fat makes them very rich.

Potatoes au Gratin.

Slice cold boiled potatoes, use half as much thin white sauce as potatoes and one-fourth the quantity of grated cheese. Arrange in a buttered baking dish, cover with crumbs and bake until well heated through and crumbs browned.

The use of chocolate or cocoa

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cakes and puddings increases the food value, but considering the small amount which is used could not be relied upon as a meat substitute except when combined with milk in the beverage, custard or blanc mange. Recipes for these are found in all cook books.

Besides using oatmeal, the most nutritious and valuable of all breakfast cereals, as a mush, use it occasionally moulded, chilled, sliced and browned in butter. Serve with maple syrup.

Oatmeal Macaroons.

Rub one tablespoon of butter into one-half cup of sugar, and mix with one well-beaten egg. Stir in one and one-half cups of rolled oats, one-fourth teaspoon of salt and one-half teaspoon of baking powder. Drop small shapes on greased pans, and bake in a hot oven until brown and crisp.

Oatmeal Gems are very good. Substitute cooked oatmeal for half the flour in your recipe for gems.

Oatmeal Biscuit.

One cup rolled oats, one tablespoon lard, salt. Pour on two cups of boiling water. Let it stand until lukewarm: add one-half cup of molasses and one yeast cake, and flour enough to mould. Let it rise, then shape, arise again and bake.

Besides the ever popular Boston Baked Beans, either beans or peas (dried) may be soaked, boiled until tender in salted water, chilled and served on lettuce leaves, with a highly seasoned boiled salad dressing.

Soups.

Nothing more delicious or nutritious in the way of soup can be made than a good cream of pea soup.

Pea Soup.

Cook the peas until tender, mash through a seive, add an equal amount of thin white sauce. Thin to the desired consistency with the water in which the peas were cooked. Season to taste.

Chestnut Soup.

Parboil French chestnuts, shell, boil until tender, mash through sieve, add to thin white sauce, if too thick add more hot milk. Season and serve at once.

Almonds salted in candy or cake may be served with the meal to raise the protein. Nuts of any kind or mixed may be added to fruit salads.

Cheese Pudding.

One-half pound cheese grated, 4 slices bread buttered. Line baking dish with part of bread. Add cheese, season with salt and cayenne. Cover with bread. Pour over a pint of milk. Let stand 5 minutes. Bake 20 minutes.

Rice Macaroni.

Cook macaroni in boiling water 30-45 minutes. Drain, blanch, cut into very fine rings. Make cream sauce, grated cheese and macaroni. Put in a dish. Cover top with grated cheese and bread crumbs. Brown in hot oven.

Nut Bread (Mrs. English.)

4 C flour (pastry), 1 C sugar (scant), 1 T salt, 2 T baking powder, 1 C nut meats, 1½ C milk. Sift together 4 minutes and add chopped fine. Stir to smooth dough, turn into bread tin, let stand 20 minutes, bake 40 minutes.

Tomato Rarebit.

1 lb. grated cheese, 1 C tomato (strained), 1 C stale bread crumbs. Rub sauce pan with clove of garlic. Turn in the mixture, stir rapidly until smooth and hot. Serve at once on toast.

I am unfortunately unable to give proper credit for some of these recipes because I do not remember where they were originally found.

"I wonder what the teacher meant about the singing of my two daughters?"

"What did he say?"

"He said that Mamie's voice was good, but Maude's was better still."

What we eat and how we eat it are two questions of importance.

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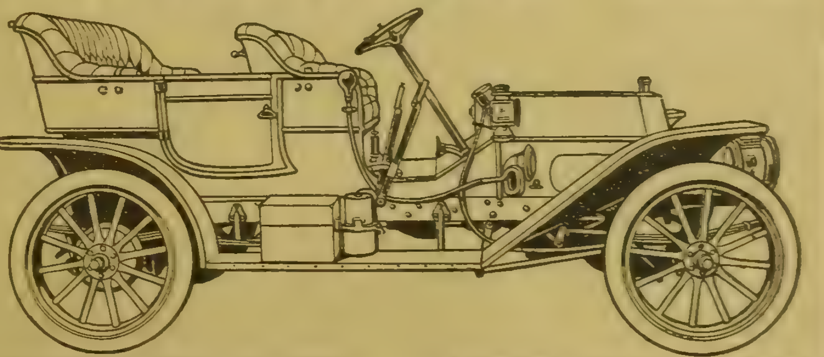

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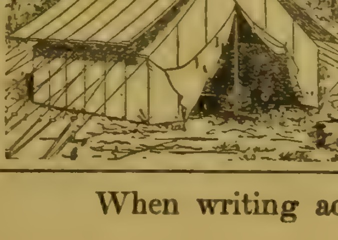

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San Francisco and Los Angeles Produce Markets

Los Angeles Markets

LOS ANGELES, Nov. 2, 1910.

Butter.

With more liberal receipts butter still stands at last week's quotations. Yesterday saw 51,000 pounds of fresh stock enter the market.

Price to trade 2½c in advance of the following Produce Exchange Quotations:

Extras	.35
Firsts	.32½
Cooking	.26

Cheese.

Local	.18
Northern, fresh	.18@18½
Oregon Daisy	.18½
Imported Swiss	.32
Domestic Swiss	.22@24

Eggs and Poultry.

With light receipts eggs show great firmness and yesterday saw a 2-cent advance which makes present quotations stand at 49 cents for extras and 45 on case counts.

Paying price f. o. b.. L. A. is:

Local ranch candled	.49
Case count buying price	.45
Eastern fresh	.35
Eastern Storage	.32
Seconds	.27

Dealers pay for live poultry f. o. b. L. A.:

Hens, per lb	.17@19
Roosters	.8@10
Spring	.18@23
Turkeys	.25@26
Ducks	.16
Geese	.11
Squabs per doz.	1.50

Live Stock.

The following quotations are f. o. b. Los Angeles, on all stock:

Hogs, 175 to 200 lbs.	9.25
Prime Steers	.5
Heifers	.4@4½
Calves, per lb.	.6½
Sheep, ewes, per head, shorn	5.00
Lambs, per head	3.75@4.25
Wethers, shorn	5.00

Potatoes.

Wholesale prices are:

Highlands	1.20@1.50
Salinas	1.75
Sweets, Yellow, per ctl	1.35@1.75

Onions.

Wholesale quotations:

Australian Browns	1.50@1.75
Yellow Danvers	1.50@1.75
Silverskins, lug	1.00
Garlic	7½@8

Vegetables.

Wholesale quotations:

Artichokes, northern, doz	.90
Beets, sack	.90
Beans, green	.4½
Brussels Sprouts	.6
Beans, Limas	.4
Bell Peppers, lb.	.6
Green Chilis	.5
Cucumbers per lug	.40
Cabbage, per sack	.60@75
Celery crate	2.50
Cauliflower, crate	1.25@1.50
Carrots, per doz	.25
Egg Plant, per lb	.2@4
Green Corn, box	.55@60
Green Onions, per doz. bunches	.25
Horseradish	.25
Leeks, per doz.	.40
Lettuce, common, per crate	.75@1.00
Okra, lb	.5
Peas, per lb	.5@6
Parsley, per doz. bunches	.25
Parsnips, doz. bunches	.25
Pumpkins lb.	.1@2
Radishes, per doz. bunches	.15@20
Rhubarb, local	.75@85
Rhubarb, northern	1.75
Spearmint doz bunches	.30@35
Spinach, per doz.	.20
Hubbard Squash, lb.	.2
Summer Squash	.40@50
Tomatoes, lug	.75
Turnips, sack	1.00
Water Cress, doz. bunches	.25@35

Ctrus Fruits.

Valencias	4.50
Grapefruit	2.75@3.50
Lemons	4.50@5.00

Fresh Fruits.

Wholesale prices on the market are:

Alligator Pears	3.50@4.50
Apples Bellflower	.90@1.10
Spitzenbergs	1.40
Jonathans, Cal	1.35@1.65
Greenings	1.00
Pearmains	1.00@1.25
Fall Pippins	1.00
Pineapples	6@7
Casabas, crate	2.00@2.50
Figs, box	1.00
Grapes, lug	1.25@1.65
Tokays	1.00@1.10
Mangoes, lb	.10@15
Guavas, basket	.5
Pears, lb.	.6
Bartletts	2.50@2.75
Strawberries	.4@9
Raspberries	.8
Blackberries	.9
Peaches, clings, box	.75@1.00
Plums, crate	1.50
Quinces, lug	1.00
Watermelons, lb	1½@2
Christmas Melons	2.00@2.25

Dried Fruits.

Wholesale prices are:

Apricots	11@12
Evap. apples, fy. per lb	8½@9
Figs, pound bricks, box 100	.90@1.75
Peaches	6¾@8½
Nectarines	.9@10
Prunes	.5½@11
Plums	.11

Beans Dried.

Wholesale quotations:

Limas	5.00@5.50
Black eyes	5.00
Pinks	5.50@6.00
Lady Washington	4.25@4.50
Small white	4.25@4.50
Garvanzas	4.00@4.50
Lentils	6.00

Nuts.

Wholesale quotations are:

No. 1 soft shell walnuts	16½@18½
No. 1 H. S.	.14
No. 2, all kinds	.11

Grafted or budded an advance of 2½c.

Brazil nuts	.14
Filberts	.14
Almonds, IXL, per lb, new	.16@17
Pecans, polished	.15@16
Peanuts Eastern	.7½
Peanuts, Cal	.6

Honey.

Wholesale quotations:

Extracted water white	.9
Extracted light amber	.8
Comb W. W.	.18
Light amber	.13
Beeswax	.25@30

Hay.

Buying prices f. o. b. cars L. A. are:

Barley hay	10.00@13.00
Wheat hay	10.00@13.00
Tame oat	12.50@14.00
Alfalfa	10.00@11.00

Grain.

Wholesale selling price f. o. b. Los Angeles:

Wheat, new, per ctl	1.90@1.95
Corn	1.75
Popcorn	3.50@4.00
Kafir corn	1.75
Egyptian corn	1.85
White oats	1.85
Seed Rye	2.00
Seed Barley	1.30

Feed Stuff

Wholesale selling price f. o. b., Los Angeles:

Cracked Corn	1.80
Cracked Wheat	1.95
Shorts	1.80
Bran	1.55
[illegible]	2.50
Feed Meal	1.85
Rolled Barley	1.15

San Francisco Markets

SAN FRANCISCO, Nov. 1, 1910.

Butter.

Saturday's demand was keen and a half cent advance was insisted upon by the holders, so present quotations stand at 33 for extras. Market is firm.

The official quotations of the San Francisco Wholesale Dairy Produce Exchange for today are as follows:

California extras, per lb	.33
California firsts	.30
California seconds	.29
Storage	.30½

Cheese.

California flats, new	.13@16½
Cal. Young Amer. fy. new	.15½@16½
Oregon, Fancy	.16½

Eggs and Poultry.

Eggs are coming in liberally, but under speculative demand a stiff condition prevails and an advance is noted.

Official quotations of the S. F. Wholesale Dairy and Produce Ex. are:

Fresh ranch extras	.51
Firsts	.46
Seconds	.30
Storage	.30½
Hens, per dozen	4.50@10.00
Roosters. per doz.	5.00@8.50
Fryers, per doz	5.00@5.50
Ducks	6.00@10.00
Broilers	3.00@4.00
Spring Turkeys	.23@26
Geese	2.00@3.00
Goslings, pr	$2.50@3.00
Pigeons	1.50@2.25
Squabs	2.50@3.00

Live Stock.

San Francisco prices gross weight:

Steers	.4@5½
Cows and heifers	.3¼@4½
Hogs	.6@9½
Calves, per lb.	.4½@6
Milk Lambs, Unshorn	.6@6¼
Wethers No. 1	.4½
Ewes No. 1	.4@4¼

Potatoes.

Wholesale market quotations:

River White, new box	.70@90
Salinas Burbanks	1.45@1.60
Sweets, ctl	2.00@2.25

Vegetables.

Wholesale quotations:

Artichokes	.25@40
Beans, string, per lb	.2@4
Beans, Lima, lb.	.4@5
Cucumbers, box	.40@60
Celery, per crate	.50@75
Chili Peppers per box	.25@40
Bell Peppers	.6@7
Green Corn, sk	.75@1.25
Egg Plant, box	.25@40
Lettuce, per crate	4.50@5.00
Okra, box	.40@60
Peas, per lb.	.3@5
Summer Squash, box 25 lbs.	.1.25@1.50
Tomatoes	.35@50
Garlic	.2½@3

Onions.

Onions sk., Cal	.80@1.00
Onions, Oregon	1.15@1.35

Ctrus Fruits.

Navels, new	1.50@3.00
Valencias	3.00@4.50
Grapefruit	1.50@3.50
Lemons	3.00@6.50
Limes	6.50@7.00

Fresh Fruits.

Apples, box	.50@85
Apples, Bellflowers	.90@1.00
Bananas, Hawaiian	.75@1.20
Cranberries, Coos Bay	2.50@3.50
Cantaloupes	2.00@2.50
Nutmegs	.50@1.00
Figs, box, single	.40@75
Grapes, seedless	.60@75
Grapes, Tokays	.50@60
Grapes, wine, ton	8.00@15.00
Huckleberries, lb	.6@8
Pears, Winters	.50@85
Bartletts, wrapped	1.00@1.50
Persimmons, box	.75@85
Quinces, box	.85@1.00
Pomegranates, box	.50@1.00
Plums, crate	.90@1.15
Raspberries, chst.	4.00@6.00
Strawberries, chst	3.00@5.00
Pineapples, doz.	2.00@3.00
Watermelons, per doz.	1.50@3.00

Dried Fruits.

Market is quiet and general tone not at all strong.

1910 crop, f. o. b., carload lots, per lb: Apples, 7@8¼c; Apricots, 10½@13c; do Moorparks, 14c; Peaches, 5¼@7c, with a premium of ⅛@¼c on Muirs; Prunes, Santa Claras, 5½c with ½@¾c premium on 40s; outsides 5¼@5⅜c; Figs, 4¾@6½c for White and 4¼@4½ for Black; Pears, 9¾@13c.

RAISINS—1910 crop: London Layers, in 20-lb. bxs: 6-crown clusters, $2.25@2.50; do, 5-crown, $1.75@2.00; do 4-crown, 1.40@1.50; 3-crown lawers, $1.25@1.30; do, 2-crown, $1.15@1.20. Seeded, per pkg.—Fancy, No. 16 5¾ 6c; Choice, No. 16, 5¼@5½. Loose Muscatels in 50-lb. bxs—Standard, 4-crown, 5½; do 3-crown, 4½@4¾c; do 2-crown, 4@4¼c. Dried Grapes, 3c. Seedless—Muscatels, 3½c; Sultanas, 4½c; Thompsons, 5c.

Nuts.

Walnuts, No. 1 soft shell	.15
Walnuts, No. 1 hard shell	.14½
Almonds, '10 N. P. U.	.13
Almonds, 10 Nonp.	.15
Almonds, '10 I X L	.14
Almonds, Peerless	.12
Pecans	.14@15
Chestnuts	.6@8

Beans Dried.

Limas	4.75
Pink	4.75
Black eyes	5.50@5.65
Small White	3.75
Large White	3.75
Kidneys	5.25@5.50
Garvanzas	3.25
Bayo	4.75
Horse beans	2.00
Red Mexicans	5.35
Cranberry	4.50@4.75

Hops

Hops, 1910 crop	.10@13
Hops, 1909 crop	.8@10

Honey.

W. W. Comb '10	.15
Dark Comb	.12½
Extracted W. W.	.8
Extracted, dark	.6½
Beeswax, per lb.	.24@30

Hay.

Scott, Magner & Miller say:

We have received on the market here during the last six days 4300 tons of hay, which is practically the same average amount that we have been receiving for the last few weeks.

A little fancy hay will bring out topmost quotations, but there has been such a trifling amount of such hay available that practically our entire arrivals have consisted of No. 1 and the medium grades of hay. The Hay Association is now gathering statistics of the total amount of hay on hand in the territory tributary to this market.

Alfalfa hay continues to maintain the position in the market that it has been in for the last few weeks, with no changes at present to note. The demand for this article has been exceptionally good.

Straw is dull and neglected, with the lightest kind of demand under present conditions.

We quote the wholesale prices in round lots on today's market as follows viz.:

Fancy wheat	12.50@13.50
No. 1 wheat or wh and o	10.50@11.50
No. 2 wheat or wh and o	9.00@10.00
Choice tame oat	10.50@11.50
Other tame oat	8.00@9.50
Wild oat	8.00@9.00
Stock hay	5.50@6.50
Alfalfa	9.00@12.50
Straw	.40@50

Grain.

Wheat, No. 1	1.45@1.50
Barley, good to choice	.95@97½
Barley, fancy	.98¾@1.00
Barley, poor to fair	.90@93¾
Oats, white	1.45@1.55
Rye, new crop	1.50@1.55
Alfalfa seed	.14@15
Mustard brown	.4½
Millet	.2½
Flaxseed	.5@5½
Broom corn seed, per ton	23.50

Feed Stuff.

Bran, per ton	29.00@31.00
Feed cornmeal, per ton	36.00@37.00
Cracked corn	36.00@37.00
Ground barley, per ton	22.00@23.00
Rolled oats, per ton	29.00@31.00
Middlings	34.00@36.00
Oil cake, per ton	40.00@41.50
Cocoanut cake, per ton	25.00
Mixed feed, per ton	24.00@27.00
Shorts	30.00@32.00

Deciduous Market

SACRAMENTO, October 29th, 1910.

The following circular of the California Fruit Distributors gives number of cars of deciduous fruit shipped from al points in California for the week days) ending Friday morning, Octobe 28th, 1910.

Pears, four cars:

An occasional car of pears still offers, but it is expected that next week will entirely clean up this variety.

Grapes, 293 cars:

Movement of this variety this weel is pretty nearly 100 cars heavier thai for last week. Tokays are now goin forward in very small volume and th bulk of the shipment is composed o Cornichons and Emperors. From th best information obtainable the tota movement from this time on can hardl be expected to aggregate more than 25 cars at the outside.

Weather conditions continue favorable and should there be no furthe rain it is expected that the crop w practically be cleaned up within th next ten days.

Citrus Market

NEW YORK, Monday, Oct. 31.—Th offerings today comprised ten cars c Valencias and two cars of lemons. Tru to last week's warning and predictior the market did just as expected. Th liberal offering on the first sale of th week, together with last week's supply, depreciated values and produced dull, sluggish sale with prices generally easier and lower. The critical stat of the market at this season of th year, together with the fact that value were hovering practically at the lim made it plainly apparent that the leas over-supply would cause a decline an prices today prove it.

The Valencia situation is now ver critical and the prospects for its re turning to its former heights are ver dubious, unless the market gets a goc chance to clean up and moderate offerings are maintained until the clo of the season.

Two cars of lemons were sold toda and prices obtained, although fairl good, show that the keen edge has di appeared. The lemon outlook is sti favorable for a short time, in limite supply, as the new crop Sicily lemo will begin to arrive in about tw weeks.

VALENCIAS—	Avge.
National Ex., Randolph F C	$7.
Dulce standard, Randolph F Co.	2.
Blue Banner, Pioneer Fruit Co.	2.
Pride of West, Pioneer Fruit Co.	2.
Old Mission, fancy, Chapman	7.
Old Mission, choice, Chapman	6.
Golden Eagle, standard, Chapman.	5.
Clown, fancy, Sparr Fruit Co.	6.
Circus, excellent, Sparr Fruit Co.	5.
Del Oro choice, Sparr Fruit Co.	4.
Naralimo, orch'd run Sparr F. Co.	5.
Stag, A C G, Exchange	6.
Pointer, A C G Ex	4.
Artesia	4.
Setter, A H Ex	3.
Prairie Chicken, A H Ex	3.
Butterfly, Covina Ex	5.
Blue Globe, Riverside Ex., Riv.	5.
Red Globe, Riverside Ex., Riv.	3.

California Orange, Riverside Ex.	3.10
Red Globe Riverside Ex, Riv...	3.55
Outing, Riverside Ex	2.70
Pointer, A C G Ex	3.45
Hunter, A C G Ex	2.50
Red X, O K Ex	3.35
LEMONS—	Avge.
Coronet, fy, Randolph Fruit Co...	$7.05
Euclid, Orange Growers' Fruit Co.	6.80
Naralimo, orchard run, Sparr F Co	6.75

BOSTON, Monday, Oct. 31.—Four cars sold. Clear and cool. Market is easier. No sales here tomorrow.

VALENCIAS—	Avge.
Orchard Run, S T Glendale....	$3.55
Red Globe, Riverside Ex, Riv....	4.15
Orchard Run, Riv Ex, Riv.........	2.90
Orchard, or run, National O Co..	4.70
Standard, S T, Glendale..........	3.45
Blue Globe, Riv. Ex, Riv..........	4.90
California Orange Riv Ex, Riv..	3.15
Scholl Riverside Ex, Riv..........	2.30
Standard, standard, National O Co	8.85
LEMONS—	Avge.
Protection, Cen Cal Cit Ex, Lemoncove	$6.40

ST. LOUIS, Monday, Oct. 31.—Cool. Market firm on good fruit. Prices low on account of quality. Two cars Valencias and two cars lemons sold.

VALENCIAS—	Avge.
Coyote, O K Ex	$2.90
Greyhound, S A Ex	3.15
Owl, O K Ex	2.50
LEMONS—	Avge.
Gavilan, Riverside Ex, Riverside.	$5.60
Pride of California Riv Ex, Riv..	3.25
White Cross, Limoneria Co........	5.60
Housewife, Riverside Ex, Riv....	4.20
Bridal Veil, Limoneira Co.........	6.05

PITTSBURG, Monday, Oct. 31.—Two ars sold. Market steady on oranges, ery strong on lemons. Cool.

VALENCIAS—	Avge.
Quail, O K Ex	$4.10
Coyote, O K Ex	3.95
LEMONS—	Avge.
Liberty, Escondido F G A.........	$7.85
Toxaway, Escondido F G A.......	7.10

PHILADELPHIA, Monday Oct. 31.—Two cars Valencias sold. Also seven ars Florida oranges and grapefruit. Oranges sold from $2.35 to $3.60, average, $2.90. Grapefruit, $2.30 to $3.55, verage, $3.00.

VALENCIAS—	Avge.
Tustin Gem, Tustin Packing Co..	$5.45
Old Oak, choice, Tustin P Co.....	4.30
Pride of West, Tustin P Co.......	2.60
Honest Pack, ustin P Co..........	4.60
Blue Banner, Pioneer Fruit Co....	3.25

CINCINNATI Monday, Oct. 31.—Cool. Market steady. One car lemons sold.

LEMONS—	Avge.
Bridal Veil, Limoneira Co.......	$6.95
White Cross, Limoneria Co.......	6.35

CHICAGO, Monday, Oct. 31.—Lemons re scarce and owing to the high rices trade is slow. Boxes, California, hoice to fine, $7.00@8.00.

Oranges are rather scarce. Old Californias are about cleaned up and there re but very few new coming. The market is in a healthy condition. Boxes, ate Valencias, extra choice, $5.00@.50; choice, $4.75@5.25.

Business Notes

VALUABLE OPPORTUNITY.

Cheap lumber and other building material is desirable, providing the cheapness is in price and not in quality. It is possible to get most desirable materials at the lower price through some of the large wrecking companies in cities where large buildings are giving place to the newer steel structures. One of the biggest of these concerns is the Diamond Lumber and Wrecking Company, corner Seventh and Central, Los Angeles. These people offer plate glass doors, tables, counters, bath tubs—the latter at one-third the ordinary price—plumbing of all kinds, both new and second hand and even roofing paper which is guaranteed, and all at a very low price. As an instance, we may mention that this firm is now offering shingles, full counts, at $2.00 per thousand. In addition, to maintain the low price feature, the concern offers new lumber at $15.00 per thousand. This is an excellent opportunity for those contemplating building to get rock bottom prices.

The Mammoth Hatchery of 3017 South Main street, Los Angeles, of which P. Cook is proprietor has issued its new season's price list and catalogue. It not only contains facts regarding Mr. Cook's business, but many poultry secrets of value. Under these are the care of baby chicks, feeding ducklings, feeding baby turks, diseases of the poultry yard, and other points.

It is estimated that the Riverside district will produce the coming year about 4400 cars of oranges, the Redlands district 4300, with the Pomona and the Ontario-Cucamonga districts crowding for third place with about 2500 cars each.

The Fruit Growers Protective Association of Redlands proposes to operate at an expense of about fifty cents per acre per year and aid growers in the business management of marketing.

IN SWITZERLAND.

Edward Berwick of Pacific Grove, who is now traveling in Switzerland, sends the following chatty horticultural news from that section:

Almost all your readers have an interest in learning anything that bears on the European fruit market. For the benefit of those who have not visited Switzerland I am sending this line to comfort them in any feeling of deprivation they may have experienced. This has been with me a journey of surprises. I had pictured Switzerland as a land of snow and sunshine and dizzy, shaggy, craggy heights.

I've been in this place about 10 days and have hardly had a glimpse of either snow or sunshine. Morning after morning I have looked from my window on a sad-hued scene of a sheet of water almost hidden by a dirty drabby mist which has obscured sun and mountains and even the other shore of the lake half a mile distant. I have yearned for at least one day of Pacific Grove sunshine.

Yestermorn found me walking in the open-air market, held Tuesdays and Saturdays. Country folk bring in their produce and at impromptu stalls, formed of any rough and ready material, sell it direct to consumers. And here was another of my surprises. I had pictured this a land of grim gloomy pine forests whose "withered branches" and "awful avalanches" menaced the carrier of that "banner with the strange device, Excelsior."

I find it a land of fruit trees, pears, apples, walnuts, whose tops reach heavenward to Babel heights and whose age goes back towards Julius Caesar, whose fruit—well, about whose fruit perhaps the least said the better! Scrawny, scrubby, scabby, and any other adjective of a like character you can think of, Mr. Editor, you can apply; and the price for it in market is about as small as the fruit. It is roughly handled in great open wicker baskets that must hold near 200 lbs. each of the stuff. At the same time many fine looking pears ("Williams" called here, but our Bartletts) are seen carefully packed in excelsior and sold at 20c per lb. Italian prunes, various plums, and grapes are fair, but would make no showing alongside of our California output. The grapes are sometimes put up in neat wooden boxes with lace-paper lining and holding some 2½ lbs., retailing at 25c to 55c per box.

Chickens are cheap at 50 cents and up.

But they can beat us at parcels post. Any of these market products can be sent anywhere by mail at lowest rates. Tomorrow I am lighting out by way of Interlaken and Berne for Geneva, and have arranged to send our heavier baggage, two large expanding suit cases, by parcels post to the hotel at Geneva, where we intend to stay. They will each cost us about 30 cents, including their delivery at the hotel. How's that?

Among other experiences, I have been pleased to find the German railroads, government-owned, as cheap, and comfortable as any in the world. A well-cooked table d'hote dinner is served on the train for 72 cents. Even the second-class cars are sumptuously upholstered, and punctuality is the rule.

I rejoice to say that our trans-Atlantic passages are taken for dear old California by the "Berlin," a 20,000-ton steamship of the Nordeutscher Lloyd line, sailing Oct. 28 from Naples. Traveling thus far has deeply impressed us with the old story, "There's no place like home."—Edward Berwick.

Preparations for beekeeping may be divided into two parts. The first is the acquiring of a good general knowledge of the life and habits, the limitations and possibilities of the bee, also a general knowledge of the different ways of handling bees. He should also have a general knowledge of the peculiarities of the different races as well as the advantages and disdvantages attendant upon each race of bees. He should learn something of the different styles of hives and the different tools and fixtures in use.

Paso Robles is planning for farmers institute on the 19th.

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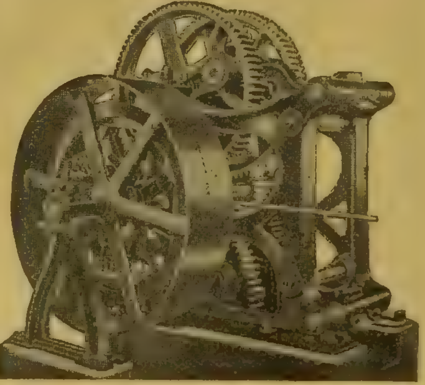

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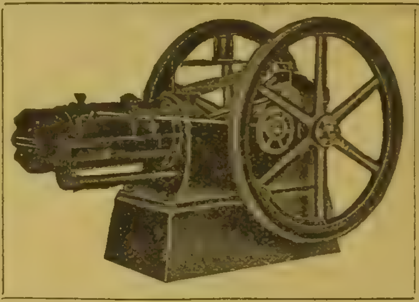

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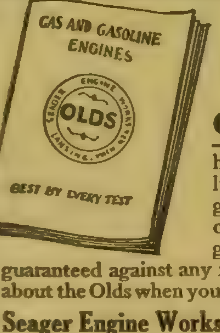

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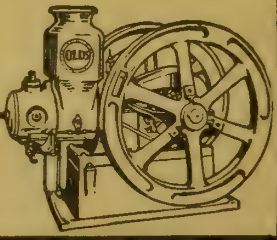

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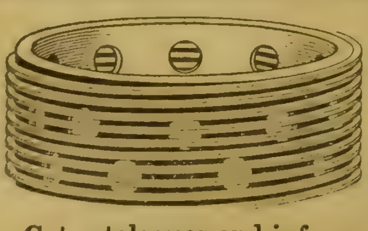

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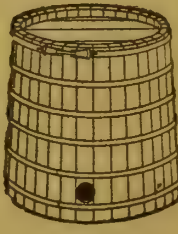

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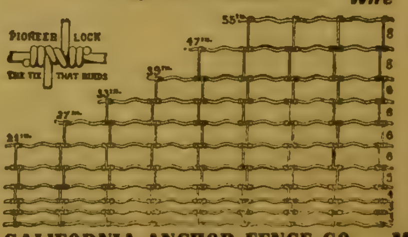

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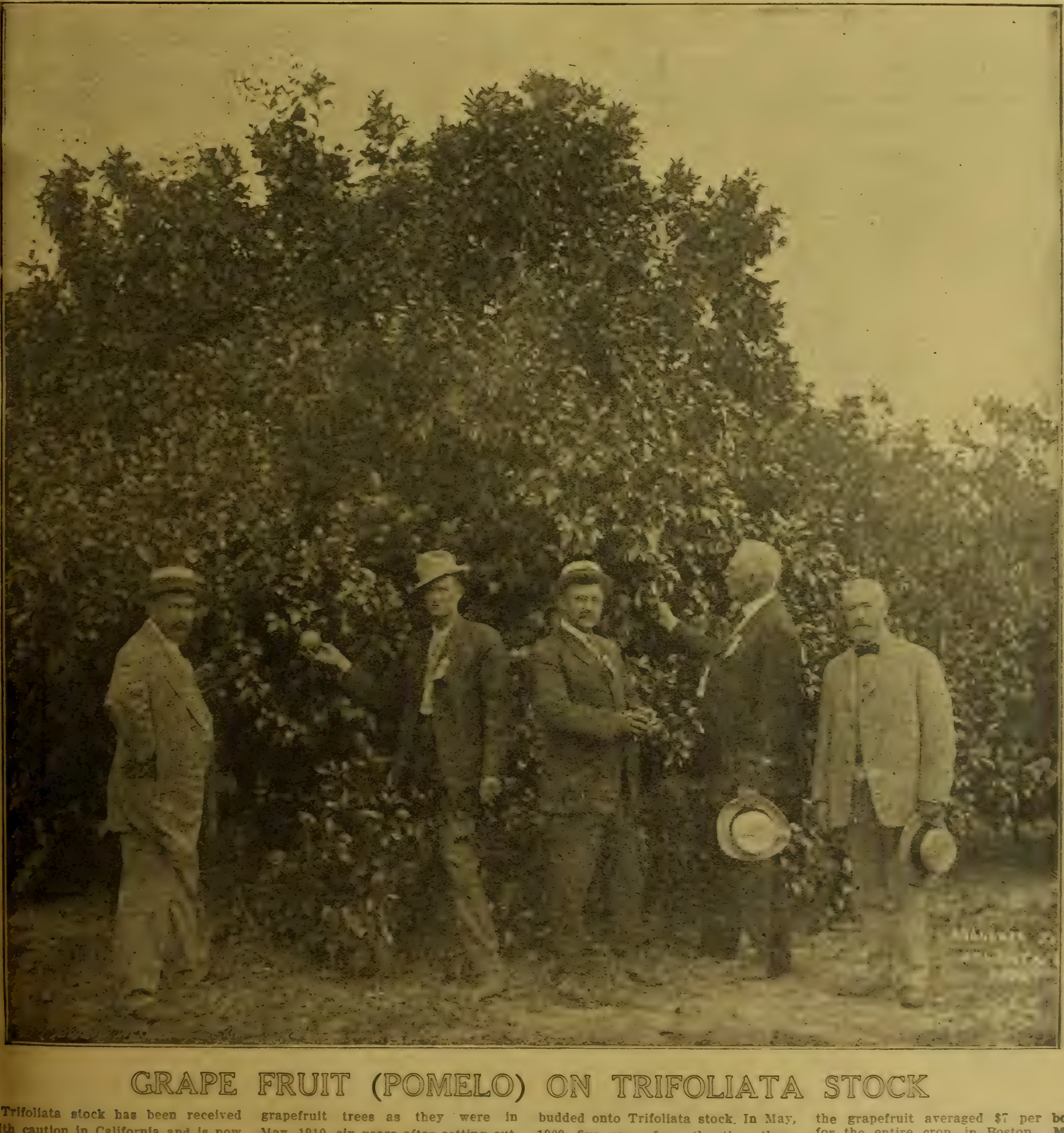
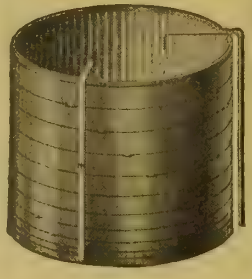


GRAPE FRUIT (POMELO) ON TRIFOLIATA STOCK

Trifoliata stock has been received with caution in California and is now but little used. In certain soi's and ocations in Florida it has succeeded wonderfully. This illustration shows grapefruit trees as they were in May, 1910, six years after setting out.

In 1904 Mr. W. C. Temple set out at his Alabama Grove, at Winter Park, Fla., 150 grapefruit trees budded onto Trifoliata stock. In May, 1909, five years from the time these young trees were set out, an average of 4¼ boxes of grapefruit per tree was shipped from these trees, and the grapefruit averaged $7 per box for the entire crop, in Boston. Mr. Temple stands with hat in hand at extreme right. This engraving is used by courtesy of the Florida Fruit and Produce News.



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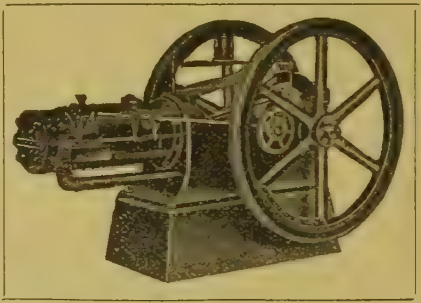

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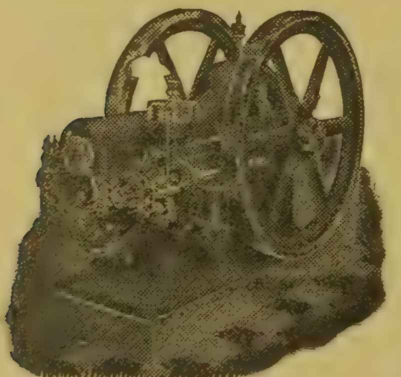

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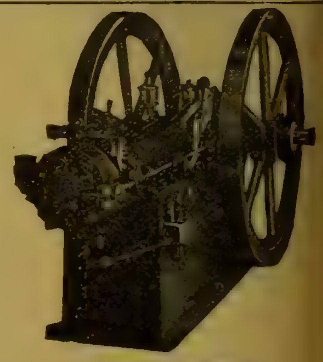

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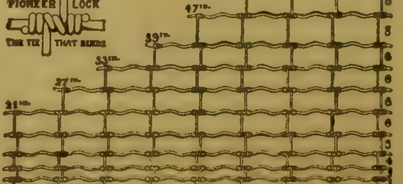
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Vol. XXXV—No. 19 Los Angeles, California, Thursday, November 10, 1910 Subscription $1 a Year

PLANTING DECIDUOUS TREES IN ORCHARD

A Symposium of a Timely Topic.—Nurserymen of all Portions of the State Write Their Opinions on Best Methods of Work.

It is none too early to plan for the coming planting of deciduous trees. The first rains which are sufficient to wet the ground deeply should be the starting point of getting the land ready. Presumably before this time it has been graded evenly so as to permit of irrigation without excessive labor or loss of water. Also we assume the variety of trees to be planted has been definitely settled. In that case, this is a good season to talk with nurserymen and make contracts for January and February delivery. It is probable that better terms can be made than in the rush of the season and the certainty of having stock for the planting is well worth forethought. The indifferent results which have been secured by many planters ever since trees were planted call for greater care. Usually the nurseryman has been charged with delivering poor trees and it cannot be denied that this has sometimes been the case. In order to give the nurseryman a chance to speak to the prospective planter we have sent to many in this state a series of ten questions which are given below. The answers to these show how the nurserymen think their trees should be handled, and we believe will give a fund of valuable information to many. Of course all the answers are in the merest outline. The answers to Question Two, for instance, as one or two express it, would require a volume if given fully.

In regard to Question Four it will be noted that diverse answers are given. We heard this answered in a farmers institute by the statement that the hole for each tree should be as large as the entire orchard. This was an emphatic way of demanding the best of preparation of the soil. If with large plow and subsoiler the orchard has been put in excellent shape the holes may be smaller than in rocky or hard ground.

Question Five brings answers which show that all are not agreed in that particular. In fact, it is a question which the planter must answer for himself in considering his own soil.

Obedience to directions given in answers to Question Six is probably the hardest, and perhaps the principles there laid down are violated as often as any others given in the list of answers. But the answers themselves are better than any comment which could be made, and we give here the series of questions, afterwards the answers with only numbers prefixed.

1. How many months are included in the best planting period, i. e., how early may trees be taken from nursery in the fall and how late may they be planted?

2. Where is it best to plant them, i. e., can you give a general idea as to planting figs, apples, pears, cherries walnuts, peaches, and such other fruits? Of course if you covered all the fruits this would take too much time but whatever information you can give is greatly needed by tree planters. Orchard after orchard has been set only to prove a failure because owners did not understand this question.

3. What age and size of tree is best?

4. How large and how deep should holes be?

5. Is it best to plant any deeper in well prepared soil than tree was set in nursery?

6. Would you recommend close pruning of roots before planting or simply trimming mutilated ends? If you favor close trimming of roots, would you go to the extremes recommended in the Stringfellow method?

7. Would you top trees, i. e., take off greater portion of top grown in nursery, and if so, before or after setting? Would you do it by exact measurement the orchard over or according to vigor of trees?

8. If irrigation water is available, would you settle dirt about the trees with water or by tramping?

9. Would you advise use of fertilizer or manure, either in hole or on surface, at time of planting?

10. Is there any advantage in protecting trunks of newly-planted trees from rays of sun? If so, what method is best?

Chas. A. Chambers, Manager and Secretary, Fresno Nursery, Fresno.

My twenty years experience in all branches of the nursery business from the planting of seed, propagating, budding and grafting; planting, pruning and selling nursery stock has enabled me to answer your questions as follows:

1. The best time to plant deciduous fruit trees and grapevines and especially that class of stock which becomes dormant in the fall and winter, is in the months of January and February. These I consider the two best months to get the benefit of the winter rains. On account of the mildness of California winters, nursery-stock does not become dormant enough in the nursery to take up, much before December 15th. It is suicidal to take this class of stock out of the nursery row until the leaves have fallen and the stock has become thoroughly dormant. This class of stock can be planted as late as April 1st, however, January and February planting is preferable.

2. Great care should be exercised in planting the right thing on the right land. A great many failures have been experienced by planting a vineyard where a peach, fig, apricot, or some other tree orchard should be planted. Parties as a rule pay more attention to climatic conditions than they do to soil requirements. They labor under the general impression if the climate is suitable for growing a commodity the soil must be.

Then again the roots of a tree must be reckoned with. A great many planters pay no attention to the root a tree is grafted or budded on. For instance a peach grafted or budded on Myrobolan plum root will thrive and be profitable on heavy land—land that carries a great deal of moisture, while this root would be a dismal failure on light, sandy land devoid of natural moisture. Plum and pear root stock as a rule require heavy land which carries lots of moisture. The peach and apricot root do better on well drained soils. This is the case with all varieties of deciduous fruits; much depends on the character of root the tree is worked on when bought from the nurseryman. This accounts for the wonderful growth made by some orchards, while right adjoining in some instances, the same varieties which were budded on a different root seem to have a jaded look and are unprofitable. Cherries, walnuts, apples, and pears require plenty of moisture in the soil to perfect their fruits and make them a profitable investment. Light, well drained soils are better adapted for fig, peach, apricot and other commercial deciduous fruits. This is so when the trees (except the fig which is always on its own root) are worked on peach or apricot stock.

3. A healthy, well grown, yearling tree is the best to plant; yearling trees have a better root system than larger or older trees. A young tree can be shaped up better in pruning and given a better start and does not suffer the shock in transplanting experienced by overgrown older trees.

4. Much depends upon the variety of tree planted. The general run of deciduous trees require a hole about 16 inches deep and the same width. Walnut trees owing to their large, long tap roots may require a hole three to six feet in depth.

5. The best depth to plant a tree is about two inches deeper than it stood in nursery row. Do not cover the budded union where budded stock is planted, keep the bud union above ground.

6. Personally I do not believe in heavy pruning of roots; all defective or broken roots should be pruned off, allowing as much as possible of the original root system to remain. I do not favor the Stringfellow method as it has no particular merit and is too much of a shock. It is all right to shock the top heavily but as the top depends on the root system, it requires as much root energy as possible.

7. Trees should not be pruned nor topped until they are set in orchard form; as soon as they are planted, they can be pruned more intelligently and shaped up uniformly. This cannot be well determined until the tree is planted hence it is best to prune and top back after planting. If trees are of a uniform grade and size, the first year the trees can be topped uniformly; the following year they can be shaped up and pruned according to growth they have made.

8. Trees should be irrigated immediately upon planting. In planting, after the tree is set in the hole, fill the hole half way or half full around the roots. Use surface soil for this purpose, never use the same soil which was taken out of the hole originally. When hole is half filled with enough soil to keep tree rigid, fill it up with water. When the trees are all set and planted, retrace and finish filling the half filled holes; by this time the water has soaked in and around the tree establishing it. Watch the trees for several days after planting to see that there is not too much open space around the tree which allows air to find the root system. Tramp soil in and around the tree firmly until tree is established.

9. No fertilizer of any sort to be used on planting; use good surface soil and if you have none available on the spot haul some. When a tree is transplanted and given a new home, it is more or less weakened and fertilizers I consider too strong a medicine to give the patient. Get your trees established and later on you can provide a fertilizer in case the soil needs it. The average soils require a fertilizer more, after a tree commences to bear, unless of course one is trying to force growth in a soil lacking the proper ingredients necessary to promote growth.

10. All trees should be protected with a tree protector. This protects them from sunburn and also from rabbits, squirrels and other "varmints." The Yucca palm protector is the best and strongest to use. It is porous, allows a free circulation of air and at the same time affords protection.

E. S. Richman, Orange County Nursery and Land Co., Inc., Fullerton.

1. We consider that three months are included in the best planting season, viz., January, February and March. A fair degree of success may sometimes be attained by April planting but as a rule it is unsatisfactory.

(Continued on page 438.)

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NOTES ON FUMIGATION.

By A. W. Morrill, Phoenix, Arizona.

The suggestions presented in this article mostly concern minor points of fumigation and are not new. As far as known to the writer, however, these points have not been brought to the attention of California citrus growers and fumigators, publicly at least. All of the points discussed are not even of interest to all fumigators, but it is the writer's hope that some will find the suggestions of some interest and perhaps value, and also will obtain from them a better understanding of certain principles of the fumigation process.

Method of Marking Tents.

The method of placing the numerals on the tents as previously recommended and generally practiced in California differs from the original design as used and recommended by the writer and his associates in Florida. According to the manner of marking common in California the numerals are frequently a foot or more from the graduated line, or stripe; according to the original design the numerals are as close as possible to the stripe. Numerals below 10 are placed close to the stripe or graduated line at the right between the graduation cross lines. Numerals 10 and above are divided, one figure on each side of the stripe. The graduation cross line to which the numeral belongs is the one which is below it. The writer considers the original design not only neater, but more convenient in practical use. This is better appreciated when one sees tents marked in the two styles and covering the trees.

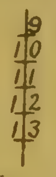

Fig. 1

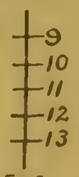

Fig. 2

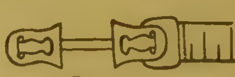

Fig. 3.

Fig. 1. Original design for making fumigation tents. Fig. 2. Design generally used in California. Fig. 3. "Washburn' clamp attached to end of tape for attaching tape to tent at any point. Original drawing for this article and used by mistake in former issue.

Measuring Circumference of the Tented Trees.

It has been my experience that pacing the distance around the tented tree was preferable to measuring with a tape. Concerning this point I have made the following statement in Bul. 76 of the Bureau of Entomology:

"One man can quickly obtain the circumference by using a tape provided at the end with means for attaching to the tent, while he walks once around the tree to the starting point, unreeling the tape as needed. For attaching the tape to the tent some form of metal clamp, such as is usually found in stock at gentlemen's furnishing stores, is suggested. In fumigating on a large scale the use of a tape causes considerable trouble, owing to unavoidable tangling and misplacing, especially when used at night. One of the operators, however, should always estimate the circumference of the tented tree by pacing. This can not be done with sufficient accuracy without considerable preliminary experience—obtained by measuring the first ten or fifteen trees covered, both with the tape and by pacing, and comparing the results. In pacing, the actual distance traveled will of course always be greater than the circumference as measured by the tape. With a little experience the proper allowance can be estimated with sufficient accuracy."

It has been my observation in Florida that men who are sufficiently careful to be suited to the responsibility of taking charge of a fumigating outfit can be depended on to pace sufficiently accurately for practical purposes. In hundreds of cases when measurements have been taken both by pacing and with the tape, they corresponded within one or two feet. However, if a tape can be handled as quickly, or more quickly, than the measurement can be estimated by pacing it is unquestionably safer and better to use the tape. The principal object of mentioning here the matter of measuring the circumference is to call attention to the inexpensive clamp or fastener which I had in mind in the reference quoted from Bul. 7. The clamp is one of the forms of the "Washburn" and consists of two clamps opening in opposite directions and connected by a straight rod. One clamp is attached to the end of the tape and it is thus provided with a permanent means for attachment to the tent at any point. The method now used by some fumigators in California of attaching the tape to a sharpened iron rod, which is pushed into the ground close to the tent may be considered by some fully as good as the one I have suggested, but it is probable that others would prefer to attach the tape directly to the tent by some such means as here described.

Measuring Water.

While I fully recognize the necessity of accuracy in every detail of fumigation, whereby greater efficiency is secured, and it is far from my purpose to advise any method of careless guesswork, the measurement of the water in a graduate for trees receiving more than five or six ounces of cyanide is advisable only when entirely convenient. In most cases it is convenient to measure in a graduate, but if anyone at any time finds the use of a long handled dipper holding fifteen or sixteen ounces more convenient, there is no reason why he should trouble himself about a graduate. The old method of measuring out the cyanide and acid at a commissary and later guessing at the amount of cyanide which has been weighed out for a particular tree, and basing the amount of water on this guess, is not a safe method. With the marked tent dosage system, however, knowing exactly the amount of cyanide which the tree is to receive, the proposition is different.

If, for example, the amount of cyanide is sixteen ounces, a fifteen ounce dipper filled three and one-fifth (estimated) times is exactly as good or better than exactly 48 ounces of water drawn off through a faucet into a glass graduate. The only precaution to observe is not to exceed the 48 ounces. If, however, a man is so careless as to measure three and one-third dipperfuls instead of three and one-fifth it will make a difference of less than one-half of one per cent in the amount of gas generated. If he carelessly measures three and one-half dipperfuls, the loss in gas amounts to less than eight-tenths of one per cent. In the first case the actual loss amounts to less than one-tenth of an ounce of cyanide; in the second case to a little more than one-tenth. It is impossible to calculate a dosage table so accurately that the loss of the gas from one-tenth ounce of cyanide would have any appreciable effect in reducing the efficiency against the insects.

If in measuring by means of a dipper if a fumigator is likely to make an error so great as to measure out one-half dipperful instead of one-fifth or less, as called for, such a person is too careless to trust in measuring acid and water even with the most accurate graduate. If the "error" consists in measuring out less than the amount of water required to make the correct proportion, there is a slightly greater amount of hydrocyanic acid gas generated. My own advice to one measuring with a dipper would be not to take the time or trouble to estimate the one-fifth dipperful in the example cited. Three dipperfuls or 45 ounces of water for the 16 ounces of acid will give practically the same result against the insects as would 48 ounces of water; theoretically a better result on account of the slightly greater amount of gas generated. An experienced fumigator can safely follow the plan, whether measuring with a graduate or a dipper, of considering as negligible odd ounces of water above two and one-half times and less than three times the amount of acid. By odd ounces I mean the difference between 48 and 51 if a 16 ounce graduate or dipper is used and the dosage table calls for 17 ounces of cyanide. It is a waste of effort for the sake of so-called "accuracy," with no gain, to bother with the three ounces of water more than the three graduate or dipperfuls.

Dosage Table Standards.

Dosage tables are only approximations at the best, but nevertheless it is necessary that they be based on experience and calculated as accurately as possible. As approximations they are none the less valuable since as long as there is leakage of gas and other factors to deal with it will be impossible to approach exactness as regards using the minimum amount of chemicals to acomplish the best possible results. All that should be expected of a dosage table is that it allow a fair margin above the minimum requirements throughout and at the same time no unnecessary wastes.

It is believed by some fumigators that a standard dosage table can be used as the basis for dosage with tents made of fabrics of different degrees of tightness to gas. If for instance a dosage table has been worked out as accurately as possible for tents made with the ordinary, loosely woven tent material the belief is that all that is necessary to adapt such a table to tents made of cloth of much tighter weave is to use one-half, two-thirds or three-fourths of the amounts called for in the original table according as a few experiments may show necessary. Such an idea is incorrect as can be readily shown.

If we begin with a table suitable for a tent of loosely woven fabric, we have one which allows for the leakage of gas according to the proportion of the cubic contents and surface of the tent. In general the smaller the tree the greater the rate of leakage to be provided for. In the case of a certain ratio (A) four-tenths or forty per cent of the total amount of gas generated is necessary on account of the leakage, with another ratio (B) onely one-tenth or ten per cent of the total is needed to make up for leakage. In ratio A the dosage amounts to 6 ounces; in ratio B it amounts to 30 ounces. By tests of a finely woven tent material on trees of about the size and form to give ratio A it is found that the dosage needed for a loose tent may be reduced one-sixth when this superior cloth is used. Shall we reduce the dosage throughout the table one-sixth, including those combinations of measurements giving us ratio B? In other words, in the first ratio we may prove by actual tests that a reduction of one-sixth, or five ounces, gives the same results with the tight tent as the original 6 ounces needed for the loose tent; now with ratio B shall we also reduce the dosage one-sixth giving us 25 ounces instead of 30? This is plainly incorrect since to do this would be to give in parts of the table a smaller dosage than would be needed for an absolutely air tight tent. It has been stated that in the example here considered the 30 ounces (ratio B) included only 10 per cent (3 ounces) to counteract the effect of leakage. Twenty-seven ounces would therefore be needed if the tent were absolutely gas tight.

More specific illustrations might be added, but the example given, based on figures found in a carefully worked out dosage table, shows that to use a given dosage table with tents of a comparatively poor quality and then to use a three-fourths dosage or a five-sixths dosage, as limited experiments may indicate necessary, may or may not give satisfactory results with tents of superior fabric. In any case there is a waste of cyanide which can be avoided only by working out an entirely new dosage table, allowing for a rate of leakage to suit the tightness of the tent.

Field Records of Fumigation Work.

The desirability of keeping a permanent record of fumigation work does not appear to have been brought to the attention of the California fumigators who have adopted the marked tent system of dosage. Mr. C. M. McFadden of Fullerton, and doubtless other fumigators have independently adopted the plan of record keeping, recognizing it as a check on errors. According to the work plan used and recommended in Florida by the writer and his former associates, the man in charge of the outfit takes the tent measurements, looks up the dosage on the dosage table and marks with a pencil on the grove diagram, in the proper space for each tree, the distances over and around and the amount of cyanide given. Grove diagrams are made out in blank form with the rows lettered in one direction and numbered in the other. It is best not to use the original complete diagram in the fields, but to use when at work a small diagram large enough to include all the trees which will be fumigated during the night. The small diagram may be filed away temporarily and copied onto the permanent record when convenient. Obvious errors in measurement or errors in looking up the dose on the dosage table may be discovered by means of records of this kind, which in many other ways prove of advantage.

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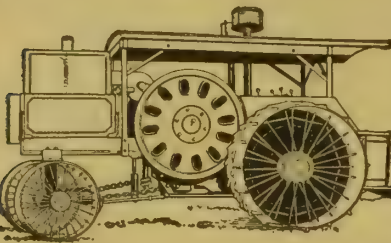

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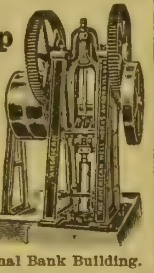

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(Continued from page 535.)

Most deciduous trees are ready to dig by the middle of December but some are not, for instance apple trees, and it is best to wait till after the holidays if a general variety is to be planted.

2. This would take a booklet to answer in full. The better the land the better the results. Walnuts specially need a deep rich soil to do their best. Apples and pears seem to thrive with moisture nearer the surface than such fruits as peaches, plums and cherries, which need a well drained soil without water near the surface.

3. For the most part strong one year trees are preferable, four feet and up in height and one-half inch and up in diameter. In the case of walnut trees larger sizes are mostly used, six feet up being mostly used.

4. Large enough to take the roots without cramping them. Eighteen inches in diameter and eighteen inches deep, or more if roots require it.

5. Two to three inches deeper in order to get the roots away from the surface.

6. With good healthy roots we trim only bruised and broken parts. Sometimes the roots get moldy from too much wet weather in winter where heeled in; in some cases trim roots and top more severely. Have never recommended Stringfellow's extreme method but have seen fine trees after that method.

7. With small trees up to three feet very little if any. No. 1 trees with good branched tops always trim back. Cut off about two-thirds of the top.

8. With good drainage we prefer to settle the dirt by irrigating.

9. Neither on good soil. With poor soil use on surface and let rains or irrigation water carry into the soil.

10. Lean trees a little to the southwest to shade the trunk and it will probably be all the protection necessary in the coast region. In interior sections perhaps Yucca or some light colored protector is necessary. Do not use tarred paper as it absorbs the heat.

Chas. H. Hamburg, Whittier Nursery, Whittier.

1. From the 1st of January till the middle of March is the best time to plant all deciduous trees in this section. For citrus trees from the middle of March till the 1st of July and at a time when they are dormant.

2. The best place for walnuts is several miles from the coast, like Whittier, portions of Santa Barbara county, Placentia, etc., where we get the ocean breeze but it does not get too cold in the winter nor hot in summer and on ground that is good, deep loamy soil, as a walnut is a deep rooter. Where grafted on the soft shell, root must not be too close to water. The damp ground will not affect the black root like the soft shell. Apples and pears do well on lower land or up in the mountain districts. Cherries do well in the mountains and in the northern part of the state. Peaches do well most any place in the interior country.

3. One-year-old bud on one and two-year-old root (a good, healthy tree is the best).

4. Two feet deep and two feet across except for walnuts, which should be deeper.

5. No, the trees should never be planted any deeper than they were originally in the nursery.

6. Trim the mutilated ends to healthy wood.

7. Yes, I would top the tree in proportion as the roots are cut, not by measurement, but according to the shape and vigor of the tree.

8. I would by all means prefer irrigating to settle the dirt around the roots if available, if not haul water, as nothing settles the dirt as well as water.

9. I would not advise using fertilizer or manure around a tree that is just being planted.

10. Yes, I think there is an advantage in protecting the trees from the sun, either by yucca method or paper.

S. W. Marshall Company, Fresno.

1. Early planting is best for deciduous stock, which usually becomes dormant and therefore ready to dig, about December 20th, depending of course on the season. From that time on, the earlier the better, although with care, planting may be done as late as the last of April.

2. This question is too large to answer as there are too many different combinations of soil and climate over the Pacific Coast, the only way to determine this, and it certainly should be done, is for the planter to obtain information in the vicinity of his planting.

3. For most deciduous stock a tree from three to six feet in height is best, a yearling tree, that is, a one year bud on a two year root.

4. The holes should be large enough to insure penetrating any hardpan or plowpan that will interfere with the roots going down.

5. Trees should be planted so that the place where the tree was budded is about on a level with the surface or not more than an inch below.

6. Deciduous trees should be topped as low as possible, where they have plenty of good live buds on the trunk they may be cut off to within twelve inches of the ground, after planting is best. This brings the fruit down where it may be picked with less expense, and affords shade for the trunk of the tree.

7. Would not advise too close pruning of roots, every bruised root should be cut off, every cut should be clean and with a sharp instrument.

8. Immediate settling with water is best.

9. If manure is used it must be well rotted and when used in the hole there should be plenty of soil between it and the roots.

10. The "Yucca palm fiber" tree protectors are the best as they are easily put on and will last a long time. Certainly would advise use of some protection.

W. V. Eberly, California Nursery Co., Niles.

1. December, January, February and March are the proper planting months. Of course, frequently a great deal of deciduous stuff can be planted in April but it is risky to wait so long. Trees cannot be taken from the nursery in the fall until the ground is thoroughly soaked and until they lose their leaves. It is seldom that we can do any digging before the middle of December.

2. Everything should be planted in good soil. Apples, pears, cherries and walnuts probably do best in

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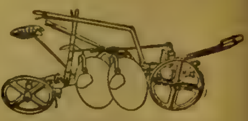

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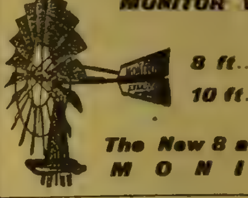

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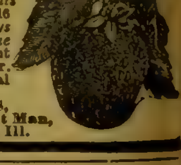

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deep, heavy soil where there is plenty of moisture and sufficient drainage. Stone fruits, like peaches, apricots and even prunes, will do fairly well on lighter soil. It is impossible for anyone to lay down any set rule, for soils are so different.

3. For large plantings probably one-year trees are to be preferred, although two-year trees of apples, pears, plums, cherries and prunes do very well. Almonds, apricots and peaches cannot be successfully handled when more than one year old.

4. Holes should be dug twice as large as the spread of the roots and twice as deep; then the top soil should be put back in the bottom of the hole to bring it up to the required depth before the tree is planted. All trees should be planted firmly, almost as firmly as you would put in a fence post. This to keep circulation of air from among the roots, etc.

5. In very light soils, where it will settle, it is well enough to plant the trees an inch deeper than they stood in the nursery; but if they are thoroughly planted and the soil is not very light they should stand no deeper when done planting than they stood in the nursery.

6. Roots should only be pruned where they are broken or mutilated. Of course, should there be a long root that runs way off to one side it is well enough to prune it back some. Stringfellow's method is wrong, at least from our standpoint and particularly for California conditions.

7. All transplanted trees should be cut back. It is best to do it after they are set out probably, as one can then get them all the same height. There is a great diversity of opinion as to how far to cut them back; some planters cut back to eight inches above the ground after planting. We think 15 to 18 inches is better on most things.

8. If water is available a good plan is to fill the holes half full of dirt and then settle with water, filling in the remainder of dirt after water disappears and tramping well.

9. Use no fertilizer of any kind among the roots; if you do you will kill the trees. It will do no harm if put on top of the ground after the trees are planted.

10. The trunks of all trees planted in California should be protected the first year. Yucca tree protectors serve a very good purpose. A shake or a board firmly stuck in the ground on the sunny side answers a good purpose. Burlap wrapped loosely around also serves. If none of these methods can be employed a heavy coat of whitewash helps.

Leonard Coates' Nursery Co., Morganhill.

1. Four; December to March, inclusive. Let the rule always be, however, to plant deciduous trees as early in the winter as possible, relying upon the condition of the soil rather than upon the month or day of the month.

2. (a) Figs for commercial purposes shoould be planted in the Sacramento-San Joaquin Valley, although anywhere in the state the fruit may be grown successfully to supply the needs of the family.

(b) Apples in the Watsonville district and along the coast northward, and also in the foothills of the Sierra Nevada mountains as well as in the Coast Range from Monterey north.

(c) Pears, almost anywhere, provided soil is right; the area for both apple and pear covers almost the whole of central and northern California.

(d) Cherries: Solano, Sonoma, Napa, Santa Clara counties; also Sacramento Valley along river bottoms, and in foothills about Newcastle, etc.

(e) Walnuts: South, in Los Angeles, Santa Barbara, Ventura and Orange counties, and also in all coast counties north of Monterey, and in portions of Sacramento Valley north of Davis, as well as about Stockton and Sacramento.

(f) Peaches: San Joaquin and Sacramento Valleys, mainly; also in all coast counties from Napa to San Benito.

(g) Apricots are grown successfully in a more limited area: Santa Clara and Solano counties, parts of Sacramento and San Joaquin Valleys and isolated spots. Also in the south in Ventura and other sections. These remarks apply mainly to California north of Tehachapi, although deciduous fruits, with the exception of cherries, are grown to some extent commercially in many parts of Southern California.

3. One year from bud or graft for deciduous trees. A tree about four feet in height and half an inch in diameter is considered by practical planters of experience to be better than larger stock. Walnut trees of larger size, and on older roots, generally succeed better than smaller trees.

4. The only rule is to make the hole large enough to allow of spread of all the roots in a natural position. This would mean not less than two feet wide by one and one-half feet deep.

5. About the same depth as in nursery or a little deeper.

6. Top the trees according to their size; taking two feet as a good average length for a topped tree, after setting. Cut it so that it will be pruned to a good bud, or where there are several good buds. A tree often fails to start because all the strong buds have been lost by cutting the top too low down. Especially is this the case with large, irrigated trees, the good buds often being four or five feet from the bottom.

7. Simply trim mutilated ends.

8. A judicious "firming" of the soil after planting is always advisable, but loose earth must be left at surface. Water and tramping do not well go together.

9. No; fertilize when orchard is bearing.

10. Great advantage; the heat of the sun on young, newly transplanted trees is the source of many ills. Any shading that will admit air, and that will reach high enough to protect the bark at first forking of limbs will meet the requirements.

E. Wightman, Chico Nursery Co., Chico.

In answering some of the questions, we have answered them from the standpoint of this section of the state.

1. Best planting time in this section is from early December till latter part of February. Trees may be taken from the nursery row about December 1st until the latter part of February.

3. One year old 4 or 5 foot trees.

4. Holes should not be dug much larger or deeper than will serve to

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set the tree in and straighten the roots out.

5. Plant the tree in the orchard about the same depth as it was in the nursery.

6. Trim off the ends of the roots with a sharp knife, making a smooth cut. Do not favor too close pruning.

7. Top of trees should be taken off about the height you wish the head to form, 18 to 24 inches inches from the ground. Some planters go over the field after planting and cut off the trees with a sharp knife, even with the knee. Should all be about the same height.

8. Use water where available.

9. No fertilizers or manure in the hole or surface around the tree. It tends to dry out the ground, is also liable to burn the tree.

10. Trunks of the tree should have protection by wrapping. Tree protectors save sun-scald, sun borers and protect the tree from barking by accident. There is a commercial tree protector made of Yucca fiber, that has given universal satisfaction.

John Vallance, Nursery Department of C. C. Morse & Co., San Francisco.

We are glad to know that you have taken this matter up as we consider it a very important one. So many people dislike to cut a tree back; they think they are losing so much growth. This is, of course, an erroneous idea and the sooner it can be corrected, the better it will be for the nurserymen. Trees left in such condition never prove satisfactory and consequently, the nurseryman is blamed for it.

1. January and February.

2. Figs should be set out in the warmer sections, principally the San Joaquin Valley, and the other fruits mentioned can be planted from Mendocino to San Diego. The intending planter, however, must use his own judgment about the best locations for each of these fruits.

3. The best tree to plant out is what nurserymen call "one year old" trees; the root is a year older so this practically makes the tree two years old, but nurserymen style them "one year old"; either 3 to 4 feet high or 4 to 6 feet high—4 to 6 feet preferable.

4. In sedimentary land, the hole does not require to be so very large, 1½ feet square will cover it. In heavier soil, 2 feet will be necessary.

5. Plant a little deeper than they were in the nursery row.

6. We recommend "medium" cutting back of the roots. We would not go to the extreme as Mr. Stringfellow does, although we practice it a great deal in our nurseries when we are lining out young stock, and have had good success with it.

7. Trees should be pruned after planting, not before. They should be cut back about the same height as near as possible. For instance, if you are planting one year old French prunes, they make a straight growth and run 5 to 7 feet high. These trees can all be cut back uniformly, about 3½ feet. This is governed a good deal by the location. In the warmer sections low heading is pursued and in colder sections the trees are not cut back so much.

8. In the drier sections it is a good idea to use irrigation to settle the soil around the roots after planting, but in the northern parts and in the Santa Clara Valley, where the rain fall is good during the months of January and February, this is not necessary.

9. In planting large orchards fertilizing is never pursued.

10. It is very necessary to protect the trunks of young trees during the first summer months, either by tule tree protectors, shakes set on the sunny side, or by wrapping newspaper and tying with a cord. This keeps the tree from getting sunburnt and is certainly of great benefit to the young tree.

Geo. C. Roeding, Manager Fancher Creek Nurseries, Fresno.

1. In California the best time for planting deciduous trees is from the first of January to the middle of March. People often desire to plant trees in the fall of the year, being under the impression that by doing this the trees will be benefited by the rains of the entire season. Most people making this mistake are led to do so by their experience in planting in the East and Middle West. Conditions are entirely different in California, where trees often grow in nursery rows as late as the first week in December, and if they are taken up too early, before they are entirely dormant, the roots will turn black in many cases and the trees will not grow.

2. Figs may be grown throughout the entire state of California for table purposes excepting in localities where the temperature during the winter months goes as low as 18 degrees Fahrenheit below zero. For drying purposes the Sacramento and San Joaquin Valleys are both very desirable sections for growing figs on a commercial scale, and the same may be said of many points in the southern part of the state forty miles from the coast.

The largest commercial apple section in the state is in the country surrounding Watsonville, from which point about 4000 carloads are exported annually. The conditions around Watsonville are particularly favorable for apple growing on account of the exceptionally fine soil which is very retentive of moisture, and also because of the cool summers which allow the fruit to mature at the time it is in greatest demand for shipment, not only to all parts of California, but also to Europe and many of the Middle and Eastern states. There are many other counties in the state adapted to growing apples, particularly those aligning the coast from San Francisco north. Very few of these sections have been exploited to any great extent, but there is no question that they possess advantages which make them exceedingly favorable for the growing of apples. The fact of the matter is that apples may be grown commercially in the Sierra Nevada mountains at elevations of from 4000 to 6000 feet. The only difficulty with the development of the industry in the mountainous sections of the state has been the matter of transportation. The interest which has been manifested in apple growing in many of the higher elevations in the southern part of the state is indicative of what may be expected there as well as elsewhere at the elevations named as soon as proper transpor-

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Pears until recent years have been grown very largely in the San Joaquin Valley. The blight, however, has practically killed the industry. At the present time they are grown quite extensively in the Santa Clara Valley and other sections aligning the coast, and plantings are still being made, and thus far no inroads have been made by the blight. It is probable that this has been due to climatic conditions being unfavorable for the rapid spread of this fungous disease which was so virulent in the interior valleys of the state. The high prices which pears are bringing annually for shipments to the East are sufficient indication of how the Bartlett pear is appreciated there. This pear is particularly well adapted for canning purposes and prices are bing paid for green pears which will justify growers in planting more, providing they have some assurance that the blight will not kill the trees. In some sections where the blight has been introduced, growers who have been careful in their methods of cutting it out have succeeded in holding it in check and in producing good crops.

The great walnut section of the state has been Southern California. Most of the trees have been of the Santa Barbara variety and planted as seedlings. In recent years a new variety, a great improvement over the Santa Barbara, has been introduced and named Placentia Perfection. The high prices for which walnuts have sold have resulted in orchardists in other sections of the state investigating the possibilities of their properties for walnut growing. The fact that the French types of walnuts like the Franquette, Mayette, Chaberte, and Parisienne are late bloomers has made it possible to grow walnuts throughout the northern counties of the state and particularly in those which receive the benefit of the trade winds from the ocean in the afternoon. Walnuts are successfully grown also in the interior valleys, particularly on the river bottom lands where the soil is of a silty nature which readily retains the moisture when thoroughly cultivated after irrigation.

There is hardly a section in the state which will not grow peaches. Most of the large commercial orchards, however, are located in the Sacramento and San Joaquin Valleys where conditions are very favorable, both for drying and producing large sized fruit of the cling varieties for canning purposes.

3. As a general rule all the varieties of deciduous trees which have been planted in California are yearlings, the only exceptions being walnuts and figs..

4 and 5. For the general run of fruit trees the holes should never be dug less than 18 inches in diameter and 18 inches deep. For walnuts the holes should not be less than two feet in diameter and from two and a half to three feet deep. There is no particular objection to planting trees somewhat deeper than they were set in nursery rows. Many growers, however, make the mistake of planting their trees even six inches deeper, and when this occurs, in many cases trees will die, or if they do not die their growth will be seriously retarded for several years.

6. It is always advisable to prune the roots of trees, and by all means remove mutilated ends. I certainly would not recommend a grower in California to adopt the Stringfellow method. This may be satisfactory in localities where there is a great deal of rainfall, but in my opinion no grower would be justified in following out this radical idea in California.

7. The proper time to cut trees back is after they have been set out in the orchard. It is a very simple matter to do this. A good rule to go by is to cut trees off at about the height of one's knees from the ground. This does not, however, apply to walnuts which many state should not be cut back. In my opinion, this is a mistake and far better results are obtained if the walnut trees are cut back to about four feet from the ground after they are set out.

8. One of the greatest difficulties in setting out orchards and the one reason above all others why they fail to grow, is because so many people will not settle the dirt around the trees with water after they have been planted. In some cases where irrigation water is available but not at the time the trees are set out, people will wait a month or so until water is turned into the ditches. In other cases the soil is not properly tramped around the trees, through the carelessness of workmen, the roots dry up and the trees die. Under no consideration should an orchardist allow more than two weeks to elapse after planting trees before settling them either by irrigation or by carrying water to them in buckets. Not less than fifteen gallons of water should be used in settling the dirt about each tree.

9. It is not really necessary to fertilize the trees just at the time of planting. It is certainly not a good plan to put fertilizer in the holes, for the young rootlets coming into contact with it are burned to such an extent that the trees in many cases will die. It will never do any harm to use well rotted stable manure on top of the ground and work it into the soil. By following this latter plan the rootlets take up the fertilizer as they require it.

10. By all means protect the trees if you wish to prevent them from being sunburned. These tree protectors not only keep the tree in a vigorous growing condition, but also prevent in many cases the introduction of the flat-headed tree borer which is the cause of so many deciduous trees dying annually in California. Ordinary paper wrapped around the trees will prevent them from sunburning. Tule is also an excellent protector, but probably the most practical one of all is that made of yucca fiber.

J. E. Bergtholdt, Secretary and Manager the Silva-Bergtholdt Company, Newcastle.

1. Trees should not be dug until they are entirely dormant, which in the nurseries of California will average from December 1st to 15th, though some nurserymen will dig before trees are dormant in order to effect early deliveries and strip the leaves, but this is very injurious to the trees. The best months for planting are January and February, though trees can be successfully planted from March 1st up to April 15th in California, where they are very carefully handled and irrigated.

2. Your question is a very broad one and one wherein a great many growers have gone wrong. There are never a great many varieties of fruit

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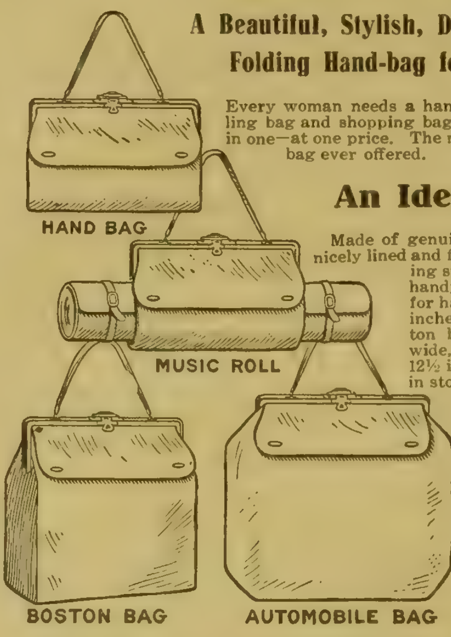

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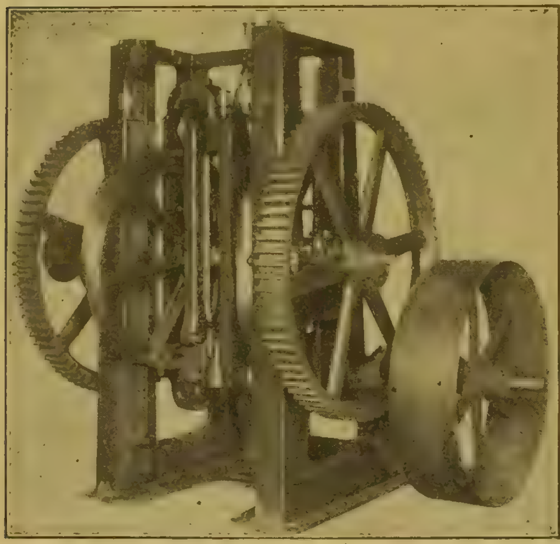

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that one can specialize in, in any one locality and do so successfully and profitably. Where we are not familiar with the conditions in the vicinity where an inquirer contemplates planting we usually advise the inquirers to ascertain from successful fruit growers in their districts as to what varieties are most profitable and take advantage of the experience of others and avoid their mistakes. California, unlike any other state, has a very great variety of conditions of soil and climate, in all of which horticulture wants to be carried on differently to harmonize with the bearing conditions. We could not give you an intelligent synopsis as to the best varieties to plant in the various fruit growing districts of the state without entering into the matter at too great length, but in the information you aim to give growers would admonish them particularly to be careful in this regard and profit by the experience of fruit growers in their district. Many Easterners will come to California and plant an orchard the same as they would plant it in the state of New York or Ohio, or some other locality, and do so to their loss.

3. We recommend the planting of one-year-old deciduous fruit trees only. In olives and oranges an exception can be taken to this.

4. Holes should not be smaller than an 18-inch cube, the larger the better.

5. It is not advisable to plant trees deeper than they were in the nursery.

6. We would recommend the pruning of roots before planting and also the trimming of mutilated ends, though we do not advise close pruning. A good root system should have from two to four main branches each, with several laterals.

7. In the majority of instances we would recommend the topping of trees at the time of planting to knee high, though this may be slightly varied in some instances.

8. We would prefer settling dirt by tramping, though where there is a lot of moisture in the soil at the time of planting it is advisable after planting to give the trees a moderate irrigation. Thorough cultivation is preferable to heavy irrigation.

9. The question of fertilizer would depend upon the condition of soil at the time of planting. The soil being replanted to trees, it is well to fertilize with barnyard manure on the surface and turn under.

10. It is always advisable to protect trunks of newly planted trees from sunburn, that being an effective preventive of borers; being also a protection from rabbits, bruising, etc. We prefer to use three shakes as it allows of circulation of air and some morning and late evening sun, which is conducive to a more normal development of the bark than is afforded by a close wrapper.

Almon Wheeler, Ruehl-Wheeler Nursery, San Jose.

1. Generally speaking, last half of December, all of January and February is the best time, but good results are obtained from March and even April plantings. Depends on the rainfall in early fall and late spring.

2. As to where to plant, commercially considered, the planter, if not experienced, should consult authorities in the neighborhood of his intended planting. Figs seem to thrive in any decent kind of ground, but require hot weather to mature a good crop before frosts and rain. Apples and pears in strong and moist soils. Cherries, walnuts and apricots in deep well drained and loamy soils. Peaches thrive better on the same treatment but are not so particular.

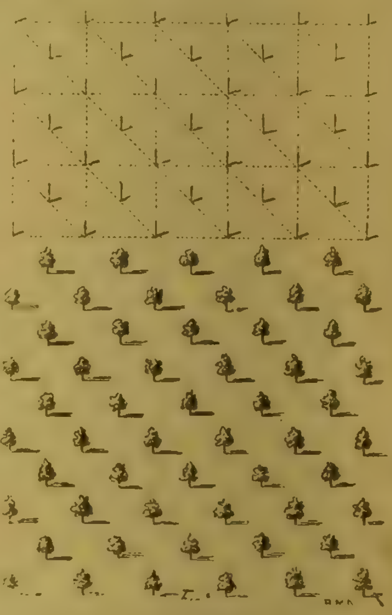
3. Age is a matter of choice, but peaches and apricots generally grow too large for planting two years old.

4. Depends on the kind of root, but no mistake can be made in making the hole larger than absolutely necessary, say two feet wide and 1½ to two feet deep.

5. In light soils a little deeper than in the nursery, but in heavier about the same.

6. Simply trim the mutilated roots, but that is a matter of opinion.

7. Yes, would take off the greater portion of top grown in the nursery, amount cut depending on kind of tree. Would do it by exact measurement if trees were of equal vigor, otherwise the weaker trees need the more cutting. Always trim after planting for obvious reasons.



TRIANGULAR-ALTERNATE SYSTEM.

8. Nothing to equal water to settle the soil about the roots, if used properly.

9. If soil requires it, use fertilizers, but you cannot be too careful in placing it about the roots, the safer way being to use as a mulch, or scatter on surface, then cultivate in if a commercial fertilizer.

10. Whitewash, a shake, or any protection allowing a free circulation of air about the trunk.

W. H. Gilstrap, Gridley Colony Nursery, Gridley.

1. Trees should not be taken from the nursery for planting prior to becoming dormant in the late fall, and may be planted thereafter any time prior to starting of sap, or growing season the next spring; but, we deem the best planting season to be during the month of February, or, fore part of March. If ground is not too wet, early planting is preferable, as it insures thorough settling of dirt around roots by the rains. Would not recommend fall planting, as the soil can not be put in as good condition after planting as prior to that time. If trees are planted after the main rains, dirt should be settled around the roots by applying sufficient water after roots are covered with dirt. The filling of the hole in which the dirt has been settled, as above indicated, should be completed with loose dirt, to prevent baking and evaporation of the moisture. Water can be applied

by hauling in tank or barrel, as a bucket full to the tree, under ordinary conditions, is ample. The land should be plowed thoroughly and deep in the fall prior to planting, and again just prior to setting out the trees. Land thus cultivated will hold the moisture better the coming season, and be much more easily kept in good state of cultivation. I consider the above advice applicable to the planting of all varieties of fruit mentioned.

3. A tree one year old from the bud, and medium size, is preferable. Under no circumstance would we recommend planting a small, or stunted tree, neither would we plant an extra large, or two year old peach tree.

4 and 5. Would recommend digging the hole much larger and deeper than would be necessary to admit the roots of the tree planted. After digging the hole, refill it with mellow, or pulverized soil sufficiently to permit planting the tree from one or two inches deeper than it grew in the nursery.

6. We recommend medium close pruning of roots prior to planting, but would avoid extremes. It is important to examine the roots closely and destroy any tree having root-knot, or other root disease.

7. Would prune all trees after planting, from twelve to sixteen inches from the ground, leaving no long limbs. Would leave a short "spur" wherever I desired a limb to grow, permanently. These limbs are frequently pruned closely in nursery, which we consider a detriment to the tree. Would keep within the limit above indicated, but vary according to the condition of the tree, and desire regarding its future shape.

8. Would certainly settle dirt around roots with water if tree is planted after all the heavy rains for the season have likely occurred. If planted prior to that time, tramping the dirt around the roots, lightly, but not in such manner as to pack it, if wet, would be sufficient. The question of having water at that time for irrigation should not govern in this matter, as it can be hauled in tank or barrels, as above indicated, at a comparatively small expense.

9. Would not advise use of manure in hole where tree is planted, but a liberal application of it to the surface is very beneficial. This is especially so in heavy, clay soil, that has been farmed to grain without fertilization for a long time.

10. We consider there is some advantage in protecting the trunk of the tree from the sun the first season, but, if properly pruned and cared for, the leaves will afford ample protection.

In this locality, failure to secure satisfactory result from planting orchards is usually due to one or more of the following named reasons: late planting; failure to properly prepare the soil prior to planting; failure to properly settle dirt around roots when planting; too much irrigation and insufficient cultivation; careless cultivation, "barking" the trees; planting unreliable, "cheap" trees; failure to properly spray the peach trees at the right time; improper, or "high" pruning. There are many who do not prune trees sufficiently close, but few, if any who prune too closely, either the first year or thereafter.

D. D. Campin, Smyrna Park Nurseries, Ceres, Stanislaus Co.

1. January and February possibly the first part of March. In taking up trees, especially deciduous in California, the first of December. Some plant up to April. Would not want to plant later than March 15th.

2. Pick out the best soil one has. As to the planting of different trees put figs 30 feet apart, apples and cherries 25 feet, pears 25 feet, walnuts 30 feet, peaches 20 feet

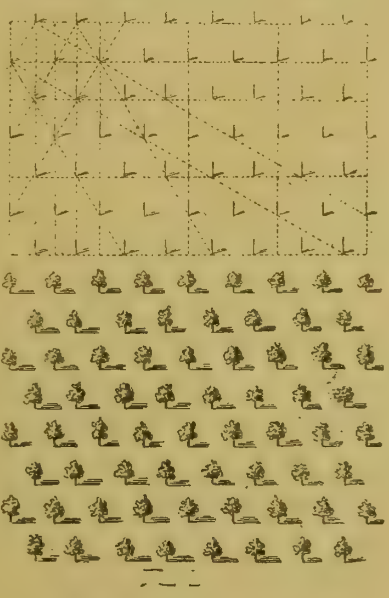
3. Two year root and one year top, 3 to 4 and 4 to 6 feet.

4. Two by two feet.

5. Trees should be planted up to where they were budded, will probably be about one to two inches deeper than in the nursery.

6. Trim all mutiliated roots and ends. Cut all ends fresh on lower side so they will be sure to come in contact with the ground. If roots are too long, cut them back to six or ten inches, although we have had some very good results where we trimmed off everything, but the straight tap root on peaches. Where we did that we also cut the top back to within two inches of bud.

7. Would top all trees. On 4 to 6 feet trees would cut them down to about 20 to 24 inches, according to the tree. Would leave trees until after planting to do the final trimming. Would try and get all trees to head as near the same height as possible, but wouldn't go to extremes.



THE HEXAGONAL OR SEPTUPLE SYSTEM

8. Would tramp all trees same but would always irrigate just after if possible, or wet them with a bucket of water.

9. We had some trees we planted in our orchard this last year on ground that was scraped heavily which were not growing to suit. We put some tree fertilizer, about a pound, around each tree and they made a good growth after being irrigated. Would never put manure in the hole when planting. Put around the top and cultivate in.

10. Would always protect trees. The Yucca tree protector is the best, but cloth or burlap is all right.

Fearing Arizona farmers may be charged with telling "fish stories," a subscriber at Yuma writes, in confirmation of productions of alfalfa seed, that "Mr. Carroll Power three miles below Yuma has produced this season 735 pounds per acre from his ten acre field. In addition, from the ten he has baled 24½ tons of straw." The seed has been sold for fifteen cents per pound and the straw at $8.00 per ton. In addition the field will give three cuttings of alfalfa hay.

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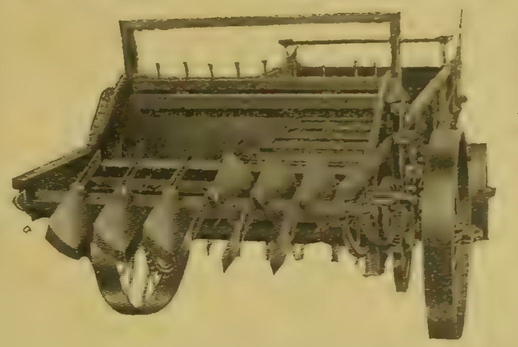
Los Angeles, California

Reference: Any Poultry Paper in the West



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At the fifth great NATIONAL DAIRY SHOW held at the Coliseum in Chicago October 20th-29th, butter produced through the use of DE LAVAL Cream Separators made the usual clean sweep of all the higher awards, just as at all previous National Dairy Shows as well as all the contests of the National Buttermakers Association since its organization in 1892.

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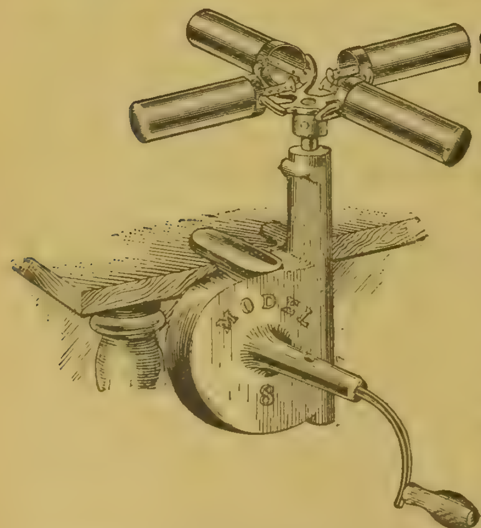

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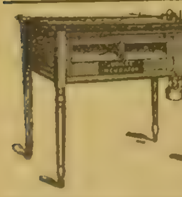

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SOME DAIRY OBSERVATIONS OF A TENDERFOOT.

By E. E. Kaufman, Kerman.

Having been particularly interested in dairy husbandry for a number of years before coming to California I made it my first point of inquiry in a somewhat hasty study of the agricultural conditions in this part of the state. About the first observation made was the high price the Californian had to pay for a good article of milk and butter. Why was it that with such good cows and such good feed all the year round there was not enough butter to go around at a lower price? A little inquiry and reading soon developed the fact that the butter eaters were increasing faster then the butter producers, and notwithstanding the great inducements to milk cows the state was importing two million dollars worth of dairy products every year. The great distance such products must be transported has the effect of so increasing the price that the dairyman of California has a more effective system of protection than could possibly be devised by congress if in continuous session for a dozen years.

Then there is the immense variety of products that can be grown in a state like California. In the Dakotas we raised wheat, corn, oats, barley, flax, horses, cows, sheep, a few hogs of different kinds and some butter. In California all the above are grown to a greater or less extent, while out here there are so many people engaged in lines of farming like raisin' raisins, peaches, oranges and all the various kinds of fruits; to say nothing of the vast number interested in raisin' the price of land, that really only a few are left to raise butter, and the only wonder is that we all do not have to eat oleomargarine on our biscuits and raisin bread.

One observation I was pleased to make was the great preponderance of strictly dairy breeds in the cows used for the dairy. Instead of a herd of ringed, streaked, striped and grizzled cows, one sees black and whites and the black and squirrel grey of the Jerseys largely represented. This is well and shows fully as much gumption as engaging in the business of dairying in the first place.

The great advantage of feed for the dairy herd under California conditions was another observation. Alfalfa in front of you; alfalfa behind you; alfalfa to the right of you; alfalfa to the left of you; the grandest feed ever devised for the production of milk and butter. Then it could be served in such a variety of ways; green, plucked in its infancy by the old cow herself; or allowed to blossom and carried to her by the dairyman; hay, loose, baled or ground in 57 varieties all pure, unadulterated and guaranteed under the food and drug act of June, 1906.

The soil producing alfalfa is fully as important as the alfalfa itself when it comes to the proposition of dairying. Not only must the soil be of the right kind to produce alfalfa abundantly, but it must be of such a nature that it can be pastured freely without injury to the growing plants or punching it full of holes during a wet time. That means the soil must be a sandy loam, easily worked and not subject to baking during hot weather.

With such a soil and a sure water supply for irrigating, green pasture is assured practically the year round, while with a soil of an adobe nature there is no pasture on account of injury to both soil and growing alfalfa. It would seem that this district is particularly well favored in this respect for absolutely no soiling is required here unless you prefer to handle your farm in that way, considered by many the most profitable.

Climatic conditions as affecting dairying should not by any means be omitted from the observations of even a tenderfoot, as they are of considerable moment in the production of milk and butter; to say nothing of their importance in the production of feed and the environment of the dairy herd. A hot dry climate the greater part of the year and an all-the-year-round outdoor life for the cow is sure death to the tuberculosis bug, hence the California dairy cow bred and brought to maturity in the San Joaquin Valley should be, and my observation is, as free from this dread disease as anywhere in the whole country, and with reasonable care there is no danger from the use of her milk in the most liberal manner. A hot dry climate with plenty of sunshine is also hard on the bacteria whose chief mission in life is to cause the rapid decomposition of milk and its products, so notwithstanding the high temperatures milk is really handled with but little difficulty during the most trying periods. And while not presuming to criticise, I believe we should be very thankful to the bright sunlight and dry air for dealing death and destruction to Mr. Bacillus Acidi-Lactici and all his kin, for I have observed now and then a cream separator in rather close proximity to hog pens.

The importance of the creamery over the private dairy or ranch for the manufacture of butter was early recognized by the Californian and while some say here as in other places they prefer the ranch butter to the creamery, I note the latter sells for five to ten cents more per pound and it is almost a safe bet that in such a perishable article the higher price means a higher quality.

The great advantage of not having to build large and expensive barns for housing the cows from four to eight months out of every twelve is one of the first things noted by the newcomer and is another score for dairying in the San Joaquin Valley.

The most interesting observation of all, however, and really only made possible by notations previously made, is the money return obtained from milking cows. Some of the cow stories first told me sounded pretty big and made me think of the statement one sometimes hears that "California has the biggest liars and the smallest stoves of any state in the Union."

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GOOD FOR MAN OR BEAST

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George Wilson.

Sold by Druggists Everywhere. $1.00 a Bottle; 6 for $5.00. Keep it in the house for family use, as well as in the stable. Get a copy of "A Treatise on the Horse" at your druggists or write to

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Is making the very best strains of blood fresh from the island of Jersey a specialty. **Whiting Jersey Stock Farm Co., Heber, Cal.**

After investigation, however, I found these stories to be true; the farmers are getting from $80 to over $100 per cow per year. Not individual cows either, but for whole herds of considerable size. One dairyman near Kerman for last July received $9.31 per cow, for August $9.25, for September $9.55, and $10.30 for October, as an average for 19 cows. I have seen other statements equally as good and find the average is from $7 to $10 a month for the year for each cow. Compared to some of the statements I used to gather and publish with great glee in North Dakota, where the farmer was receiving from $50 to $60 with a greater expense for care, feed and management than we have here, it is no wonder that I am enthusiastic over the dairy possibilities of this locality; especially for the new arrival who must somehow or other made a living for himself and family until such time as he can bring his orchard and vineyard into full bearing, or say four years at the least.

In my observations of the dairy possibilities of the San Joaquin Valley and Kerman in particular, would say in conclusion that with the present dairy stock as a foundation upon which to build future herds; a most fertile soil which grows an abundance of the finest milk producing feed in the world; an abundance of irrigating water; a cilmatic condition that supplies this feed in a green form practically the year round and at the same time is conducive to the health of the animals and the handling of milk; a nearby market ever increasing in its demands for milk, cream and butter, and at such a distance from other dairy producing regions that transportation rates are a veritable tariff wall of protection from lower prices for many, many years in the future; success in the largest measure is assured for each and every one here who is so minded to extract health, wealth and happiness from the gentle cow, the only limit being the care and intelligence exercised in managing the farm, cow and dairy.

ANIMALS IN ARABIA.

By Consul John A. Ray.

An American who has written to this consulate expressing a desire to breed horses in Arabia has been advised that it is impracticable. A fine stallion is never sold to a foreigner and could come into his hands only as a gift from some friend among the Arabs. The country around Maskat is so mountainous that horses are of little use, and are kept only by the wealthy for the sake of their dignity. The recognized market for Arab horses is Bombay.

Secretary James Wilson, of the United States Department of Agriculture declares sugar-beet pulp is the best butter producer in the world. 40c per ton at LOS ALAMITOS SUGAR FACTORY

Some gray donkeys, highly esteemed for riding, are raised in Bahrein. They stand about 12 or 13 hands high and bring about 100 Maria Theresa dollars ($42.50) in Maskat.

The milch goats are no better than those now raised in the United States. There are very few sheep here, and those of very poor quality. On account of the heat, they have almost no wool. The cattle are of the hump-backed Indian variety and are used mostly as work animals. Feed is so scarce that milch cows are fed principally on dried fish and refuse date kernels.

There are two varieties of camels in use here, the dromedary and the freight camel. The dhelul dromedaries are celebrated for their easy riding gait and speed. A dhelul carries about 300 pounds and travels about 6 miles an hour, or 70 miles a day. They can be purchased for 100 to 150 Maria Theresa dollars $42.50 to $63.75). A freight camel carries about 500 pounds and travels about 2½ miles an hour. They cost 300 Maria Theresa dollars ($127) or more. A profitable business in camels is hardly probable.

By some of the ancient nations the hog was considered a sacred animal. By others it was regarded as unclean, and prohibited as food. This prohibition among the Jews was regarded by Tacitus and others as having been because of a feeling that pork was often unfit to eat in warm climates, and apt to encourage the spread of leprosy. Moses is thought to have forbidden the eating of pork because it was liable to give the Israelites diseases that would make them unable to endure the long march out of Egypt. In those days, when cooking was crudely done, there was no doubt much reason to fear trichina.—From Coburn's "Swine in America."

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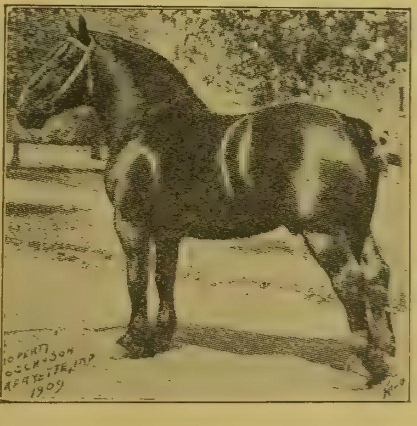

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California Cultivator

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Decadence of the Navel

At the meeting of the citrus growers called by Commissioner Jeffrey at Pomona about the middle of September a resolution was passed calling for the appointment of a committee of seven to encourage investigations and to secure aid of the U. S. Department of Agriculture and the state experiment stations, or any other forces which might help in determining a remedy for shy bearing of old orange trees, or, if no remedy exists, to learn what is the age limit of profit bearing. To aid Commissioner Jeffrey in the selection of this committee or rather to pass finally upon appointments, Messrs. A. F. Call, P. J. Dreher and C. C. Teague were appointed by the convention. The committee of seven has now been selected and has accepted the work allotted it. The seven composing it are: C. C. Chapman, Fullerton; A. F. Call, Corona; Dr. J. Allen Osmun, Whittier; P. J. Dreher, Pomona; C. E. Bemis, Covina; R. C. Allen, Bonita; and Harry B. Chase, Riverside. The last named gentleman may not be able to act because of possible absence from the state. This is a representative committee as to communities and as to ability of the men forming it. We believe it will be a committee of action and that something leading to definite results will be done.

Cryptogamus

It is not safe to make any very definite predictions as to results of introduction of new parasites. There have been one or two examples of wonderful work in saving the fruit industry, many have been failures, but now a newly introduced parasite of the mealy bug bids fair to equal the good work of the vedalia with the white scale, though it is yet too early to make definite assertions. Several individual cases of good work on the part of the cryptogamus brought by George Compere from Manila less than a year ago are hopeful indications. One vineyard near Fresno which was badly infested is said to have been completely rid of the mealy bug. It has also proved equally as successful in work on citrus tree infestations. The amount of feed shipped to the state insectary to keep alive the little colony there, with its increase, has been such that the office has paid $1 for expressage. We do not wish to hold out hopes for miraculous results, but would suggest that orchardists who have infestations of mealy bug get in touch with the office of the state horticultural commission at Sacramento.

Use Care

We receive almost every day insects, fruit, and leaves for naming or suggestion as to treatment. Sometimes these are in good condition and easily determined, but often soft-bodied insects are folded in with letter and after experience in the post-office and postal cars arrive at this office mashed beyond recognition. We would suggest that where insects are mailed, small tin boxes or the very small mailing tubes are almost sure to preserve specimens in good condition. Usually leaves mailed in envelopes arrive in satisfactory condition, but if subscribers will observe this caution we can render much better serice.

Flower Show

One of the greatest showings of flowers ever made was that exhibited by the Pasadena Gardeners Association last week in the banquet room of the Hotel Maryland. A great collection of rare plants was the most attractive feature. Dr. Franceschi of Santa Barbara alone had 65 varieties never before exhibited in this state. Many rare plants were shown from the gardens of H. E. Huntington, and a judge of chrysanthemums said he had never seen the equal of the magnificent 'mums displayed. The Pasadena Association has the most active membership of any similar association in the state.

Country Life Hall

Notwithstanding the Country Life Commission did not accomplish all that it might because of the fact that Congress withheld financial support and the commission existed in name only, the people of the state of Washington and especially those of Spokane have advanced money for publishing the findings of the Commission, and in addition the Country Life Committee of the Chamber of Commerce of that city are advancing the work which it started.

One of the latest suggestions of the committee is the establishing of a Country Life Hall to be located in a community center and to be a clearing house for information as to the particular district which it represents. Its keeper should be a Country Life Secretary and a part of his work should be to keep a record of the different kinds of stock and farm crops produced in the district, quantity ready for market, and other general information, at the same time to be in no sense a business manager. A further suggestion is that the Department of Agriculture or the government in some way, award premium ribbons or banners to the farmer in each Country Life District who raises the best corn, the best wheat, the best fruit, the best live stock, or other products. The idea is to make the whole proposition as educational as possible.

Specialized Demonstration

California farmers have received great benefits from the demonstration train secured through the courtesy of the Southern Pacific Railway and the University of California. This train which will soon begin its third annual trip, has endeavored to touch all features of California agriculture and horticulture so far as possible. Iowa has gone us one better for she has specialized her demonstration train. The corn special, the wheat special, and others may be recalled. Now comes the announcement of the breakfast bacon special. Its object is to show how to increase number of hogs, secure more economical feeding, decrease loss at farrowing time, and control other losses. It is stated that the twenty-five per cent loss which the swine breeder has to endure would be fatal to any other business. To save this twenty-five per cent and give greater prosperity to Iowa farmers is the aim of the breakfast bacon special.

The International Dairy Show opens in Chicago on Thursday, November 20th and continues through the following week.

Land Shows

One of the big land show successes last year was the one held in Chicago under the direction of the Chicago Tribune. That was the first of its kind in that city and the second is scheduled for this year from November 19th to December 4th. Thousands of land buyers in many Eastern sections will center in Chicago at that time and secure information which will be gathered together in this big land show. It it estimated that fully a half million people will attend during the fifteen days. Last year's attendance was 350,000.

The show is devoted to exhibits from those sections of the country which are being developed by irrigation; also in a more general way any land opportunity may be presented. There will be exhibits of products, tables of rainfall, analyses of soil, illustrations of private and government reclamation work on waste lands, and of course exhibits of all kinds of implements and development machinery.

Farmers Institutes

Dates for farmers institutes in Riverside County have been arranged by J. B. Neff, Conductor of Southern California Institutes, as follows: Beaumont, November 30; Banning, December 1; Thermal, December 2 and 3. Mr. Neff reports that the people of the Coachella Valley will make an exhibit at Thermal which will be well worth a trip to see. It will consist of products grown under desert conditions, some on alkali land so strongly impregnated that it was predicted no crops whatever could be grown.

"The Control of the Argentine Ant" is the title of Bulletin 207 of the state agricultural experiment station. It is written by Prof. Woodworth and gives the results of two years of investigations of the Argentine ant in California. It reports infestations in East Oakland, Alameda, San Jose, San Francisco, Cupertino, Campbell, Los Angeles, one point near Azusa and another near Upland. All told there are in the state over 5000 acres which may be said to be infested by some 40 separate colonies. The bulletin is illustrated with many drawings of different forms of ants which will aid in identification. Methods of barring out ants by water barriers, destroying by insecticides, ant powders and fluids, and arsenical poisons are given.

The Vice-President of the California Fruit Exchange, commenting upon the shipments of fresh deciduous fruit this season, stated that California fruits kept better and made a better showing on the market and always had special advantages over that from other sections of the country. If this were not true the long hauls and high freight rates would not permit California's fruits to go to market. This advantage should be increased by most skillful packing and attractive packages.

Beginning on December 6 the State Fruit Growers Convention will be held at Stockton under the direction of State Fruit Commissioner Jeffrey who is now preparing a most attractive program. We understand the principal theme will be standardization, and otherwise it will be largely given over to the marketing or business side of the fruit industry.

Agricultural News Notes of the Pacific Coast

Northern California

A spur track is being built to the cannery at Suisun.

The Yuba City creamery is now producing about 350 pounds of butter daily.

Colusa county is spending thousands of dollar on new reclamation propositions.

A live stock sale was held at Birds Landing, Solano county, which netted $11,000.

Marysville, Yuba county, has been successful in experimental plats of cotton this season.

There are about 90 students attending the College of Agriculture at Berkeley this year.

The Western Pacific is planning to move a large portion of the orange crop of Butte county.

Extensive plantings of Thompson Seedless grapes are being made at Yuba City, Sutter county.

Bullards Bar, Yuba county, reports Bartlett pears seven inches long and seventeen in circumference.

Fairoaks, Sacramento county, will ship its largest orange output. Some fruit is already going forward.

Some apple orchards at Day, Shasta county, yielded about a ton to the acre this year and sold at $500 per ton.

Some of the finest olives ever produced in Fairoaks, Sacramento county, will be the result of this year's harvest.

Some exceptionally good hop sales have been made at Santa Rosa within the last week, some being reported at 13½ cents.

A new tract of a thousand acres at Chico has been brought under irrigation and will be planted to sugar beets the coming season.

A sheep poisoner has been at work amongst the flocks of Sonoma county and farmers are loading their shotguns and hoping for a chance at him.

Bean growers of Sacramento county will make exceptionally good money from their output this year. They have received $4.25 per hundred as against 85 cents a few years-ago.

Olive gathering in the groves about Oroville, Butte county, begins about the first of this month, which is earlier than usual. The crop is not quite so heavy as last year, but is of exceptionally fine quality.

A suit to condemn rights of way for an irrigation system has been brought in the Superior Court of Tehama county against the Central Pacific Railway. The right of way desired is to be 100 feet wide.

A large milk condensing plant is to be established at Arcata, Humboldt county for the production of "Carnation" cream. It will call for an investment of about $50,000.

The grand jury for the northern districts of California has found indictments against several canning companies of this state because of the labeling of "adulterated and decomposed vegetable substances as pure fruit."

Central California

Lindsay is now shipping ten to a dozen cars of oranges daily.

Livingston, Merced county, is in full swing with its harvesting of sweet potatoes.

It is said that there are 425,000 acres of land open to entry in the Visalia district.

Much land near Laton, Fresno county, is being benefited by artesian well irrigation.

Lodi's Tokays have sold well, but later receipts have not been quite so satisfactory.

Kerman Malaga and Cornichon growers netted $40 per ton for many of their shipments.

Exeter has decided to make extensive exhibit at the coming Nevada County Citrus Fair.

Dinuba is in the midst of its Emperor grape shipping campaign, the greater part now being picked.

The prune market remains quiet and the demand now is more largely for big sizes and more desirable fruit.

C. A. Kimball, a sheep dealer at Hanford, recently shipped two cars of Rambouillet yearlings to an Oregon sheep herder.

The third season of the San Joaquin Valley Conservation and Irrigation Congress will be held in Los Banos next Saturday.

California division of the Farmers Union will convene at San Jose, November 15, 16. The national president will make an address.

The Merchants Association of Visalia has decided to give the streets of that city a brilliant illumination during Citrus Fair week.

An organization of poultrymen has been effected at Santa Cruz and a decision reached to hold a poultry and pet stock show in July next.

Secretary Miot of the Tulare County Board of Trade is in Chicago in charge of the Tulare exhibit at the Irrigated Lands and Products Exposition.

Tulare hopes to have a cannery in operation before another season, and to that end $16,000 has been subscribed by the merchants of the town.

It is reported that the "High Five" are bearing the market on raisins. The principal demand so far is for goods which can be worked over into layers.

The management of the Tulare county Citrus Fair, Dec. 5-10, has planned an advertising campaign, one feature of which is the distribution of 20,000 post cards.

The Kings County Fair Association directors find that owing to the stormy weather during the fair receipts were not quite sufficient to pay premiums and all expenses.

The committee appointed by the Fresno Chamber of Commerce to investigate as to size of the present raisin crop has not yet reported and the market is in a very quiet and waiting attitude: It is rumored that packers are anxious to force down to 2½ cents, but growers are unwilling to sell for less than 3½.

Southern California

Orange county shipped 2,800,000 eggs during the last year.

Fullerton district will produce about 35 per cent less walnuts than last year.

Big Rock in the Antelope Valley is proving a very profitable apple producing section.

Weaver Bros. of Imperial are importing from Missouri a number of very fine Berkshire hogs.

Imperial Valley has already shipped out 500 bales of cotton. The picking is done largely by Indians.

One company at Perris, Riverside county, will plant 100 acres to eucalyptus during the coming season.

The contractor for the new sugar factory at Anaheim has broken ground and begun construction.

The Olive Pickling and Oil Co. of Bloomington, San Bernardino county, is employing much outside labor.

The midwinter tomato industry is becoming a great factor in the frostless sections about Los Angeles.

A thousand dollar income from ten acres of alfalfa seed is reported from a Hemet, Riverside county, farmer.

Lemon growers are greatly disappointed at the ruling of the federal court advancing the rate on lemons.

Redlands shipped 3880 cars of oranges during the last year, which is about 700 cars below the preceding year.

It is now predicted that within a short time shipments of oranges will be made by water and the Panama Railway.

The contract for a new sugar factory to be built at Huntington Beach has been let to the Carl Leonardt Co. of Los Angeles.

Antelope Valley dairymen are appealing for a cheese factoy and one has practically been promised if 2000 pounds of milk daily can be assured.

In the report of the Sunset Fruit Exchange of Orange county the manager showed an expense for grading and packing of a cent and a quarter per box.

The section between Escondido and the ocean in San Diego county is proving to be an exceptionally fine bean producing country. One planter there has 1400 acres of limas and blackeyes.

The election of the Fernando Fruit Growers Association resulted in placing of the following board of directors: H. P. Canby, F. A. Powell, R. P. Waite, C. D. Hubbard, R. H. Maclay, John Burr, and F. A. Fletcher of Whittier.

Ontario, San Bernardino county, has regarded with pride its Euclid Avenue 15 miles long and 200 feet broad. and is now much disappointed that many of its older trees are dying because of lack of care and water.

Special agents of the State Fish and Game Commission investigating work of squirrel poisoning in Santa Barbara and San Luis Obispo counties have declared that many game and song birds are being destroyed.

The Coast

Walla Walla apples are readily commanding $1.50 per box.

The yield of corn in Texas this year will be 129,000,000 bushels.

Portland gets the next meeting of the National Wool Growers Association.

Arizona's population is credited as 204,354, an increase of 66.2 per cent in the last decade.

Apple shippers at Eugene, Oregon, have lost some sales this year because of lack of boxes.

The winter short courses of the Oregon Agricultural College will begin on January 3rd.

Three new instructors have been chosen for the Oregon Agricultural College at Corvallis.

A four-state convention on good roads was recently held at Walla Walla, Washington.

Hundreds of sheep have been lost near Dayton, Washington, by depredations of wild animals.

The first Canadian National Apple Show was held at Vancouver, B. C., beginning October 31st.

Josephine county, Oregon, has picked its banner crop of apples which aggregates about fifty cars.

One sorghum grower at Sulphur Springs Valley north of Douglas, Arizona, produced a $4000 crop from an investment of $350.

The Oregon Short Line will run a farmers institute special through the northern part of Utah and in Idaho during the month of December.

The Boise, Weiser and Payette Valleys of Idaho shipped this year 1050 cars of prunes which netted more than a million dollars to the growers.

A unique feature at the Interstate Fair at Spokane is to be a great monument fifty feet in height built in the form of an obelisk and of baled hay.

The Venezuelan Government has ordered the establishment of a section of plants and seeds under the agricultural division of the Ministry of Commerce (Fomento), which is charged with the importation of seeds and plants.

Mexican rubber shipments in 1907-8 amounted to 5,624 tons; this was greater in 1908-9, being 6,015 tons; at the same time, there was a slight decrease in the value of the exports.

The chief agricultural exports from Mexico are henequen (sisal hemp) and coffee. Of the former 107,809 tons, value £2,438,027, was exported, as against 110,746 tons, value £2,758,224, in 1907-8.

Fresh fruit from Mexico finds an excellent market in the United States, and the amounts exported in 1907-8 (7,239 tons, worth £38,430), increased to 9,351 tons, worth £49,305, in 1908-9.

An 18-inch branch from a pear tree on the A. M. Smith farm, west of Corvallis, Oregon, contained 22 pears, all of large size, and several of them five inches in length. Many other branches on the tree show almost as great fruit growth.

Coulson's

EGG FOOD

If you were going to erect a large building, you would consult an architect—if you wanted some legal papers drawn up, you would go to a lawyer—because these men have made a special study of their respective professions.

The same principle applies to the feeding of your chickens. Presumably you have not the machinery or formula for making an egg food so that it will be just what your hens need.

That's why you should buy COULSON'S EGG FOOD. It is the result of years of study—it is scientifically mixed by experts with the right proportions of the various ingredients to give a balanced ration.

COULSON'S EGG FOOD means a healthy stock, with great laying powers and eggs of quality. Saves you the time of mixing—provides a better feed—makes more eggs—means more profit, as COULSON'S EGG FOOD more than pays for itself, through making hens lay to their full capacity.

It is especially advantageous to use it at the present time, when the price of eggs is beginning to increase, and when also you are anxious to have your hens in good condition for the molting season.

Hens eat only what they like, but there are many foods they must have, and which must be mixed with their regular food so that they get the desired quantity. The only way the food can be mixed is by improved machinery—that's why you should feed COULSON'S EGG FOOD.

Get it at your dealer's; anyway send for our Catalog which tells about the famous Coulson products and gives valuable information about Poultry Raising.

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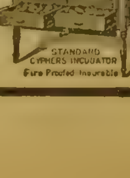

Practical Poultry Culture

WHEN THE CHICKENS ARE SICK.

By Bee Josephine O'Mealey.

No, chickens are not more liable to disease in California than elsewhere. People never ask how to remedy a defect which is not manifest. We never run after the train we have boarded nor fret about the delay of the train which is on time. So, very few persons doctor the chickens which have not shown signs of sickness; unless, indeed, it be some forehanded person like the Indian woman whom I saw a couple of years ago.

She had three or four clean, quiet, mannerly little folks with her in the strawberry field. Near them was a white family whose ten-year-old girl was the antithesis of the little Indians in behavior, in short, as disagreeable as only a spoiled child can be; the contemptuous rudeness of her manner toward her doting parents made the little Indians' mouths stand agape with horror. Noticing her fascinated attention, the Indian mother reached over and gave her papoose a couple of slaps over the head, which speedily distracted her attention, and that most effectually, with the stern remark: "Never you try that." Her plan while somewhat drastic, was a wise one; to meet trouble before it started and bar its progress from the beginning. And the best time to doctor sick chickens is before they show symptoms of ailment. I have spent many hours answering inquiries regarding roup, but never had a case of it in my own flock; have never seen a case of pip or gapes and am fully content if I never will. Blessed is contentment!

The chicken family is naturally healthy and has little tendency to disease if properly bred and cared for; and it is safe to say three-fourths of their ailments are preventable ones. Cleanliness is next to godliness and certainly synonymous with self-respect, but the filth I have beheld in some henhouses would indicate a tremendous lapse of something—energy, if nothing worse.

A wealthy farmer once asked us to go and see his chickens and see why they did not do better. The henhouse was about ten by twelve with fairly tight board walls and shed-roof. The building was guiltless of windows, ventilators or any such frivolity. The perches were made of split fence rails, the first one lying in the filth at the door sill and ranging up stair-step fashion to the roof at the back, and the space behind these perches was filled in solidly with excrement, so that each rail was partly imbedded in it, and the number of mites and lice cosily sheltered in the splintery surface of the rails was beyond the power of a whole college of mathematicians to compute.

Chickens are creatures of unreasoning fixity of habit, so they went nightly to that vermin-infested abomination to be poisoned by all night inhalation and have their blood sapped from them by those insatiable parasites. Did you ever get a few chicken mites on yourself? Recall how frantic you were. Imagine then how a hen feels when her feathers are full of the bloodthirsty crawlers.

And then when you start out to exterminate the unwelcome things, do use some judgment. Don't drench a hen with kerosene or dust her with fresh lime. We have found a mixture of 1 cup lard, 2 spoons sulphur, spoons insect powder, ½ cup kerosene well mixed and applied around neck, vent, under wings and legs, to be very effective and it does not take so long as you might think to take a hundred chickens off the perch and grease them.

Few houses are tight enough to make fumigation practicable, so other means must be employed to rid the houses of vermin. A large-sized machine oil can filled with kerosene and thoroughly spurted into every crack or crevice will usually do the business.

However, if you are very careful, there is a more effective way. Provide an ample supply of water. The garden hose if you have it or at least a couple of tubs of water and a big saucepan for a dipper. Oil the perches and walls, then with a torch burn the oil off, being ready to apply the water whenever the fire bids fair to be too energetic. Provide liberal dust baths with plenty of air-slaked lime and sulphur and put air-slacked lime in the nest-boxes and also on the dropping-boards, for of course you use dropping-boards. But whatever you do you must do it over and over again, for while I cannot agree with the many who argue that lice and mice grow spontaneously, they do certainly multiply faster than a patent lead pencil.

Since coming here I have made the acquaintance of some large brown flat bugs—a sort of improvement(?) on the "mahogany flat" occasionally met with in human habitations. They seemed indifferent to powders or kerosene; boiling water affected only individuals, not the masses, and I finally adopted the slow, unpleasant, but thorough, method of jarring them out of the cracks wherein they had hidden, or digging them out with an old knife and dispatching them one by one, as the Frenchman recommended for the fleas. It was slow and nasty but I finally got rid of them.

Fully three-fourths of the poultry ailments are due to filth or vermin; eliminate these and you have plain sailing.

If your chickens appear to have droppings too loose put a bit of alum in the drinking water. If you feed any food which has fermented, sweeten it with a generous spoonful of soda.

One occasionally hears a query about the use of salt. Yes, salt their food as you would your own, it is beneficial and may avert trouble.

THE SOFT ROASTER.

What is a soft roaster? Dr. P. T. Woods answers this question in American Poultry World as follows: "Simply a quickly-grown chicken, well fed, and marketed while still soft-fleshed. Usually the males are caponized at an early age, as this practice results in more and better flesh which will keep soft for a longer time. The pullets also are sold as soft roasters and are pushed as rapidly as possible for flesh production to get them into the market before they begin laying. When egg production is well established, the pullet is no longer in the soft-meated class. Formerly the term soft roaster applied almost exclusively to winter-grown chickens, chiefly capons. * * * At the present time the production of fancy soft-meated roasting chickens is becoming popular in many sections of the country although the production of these superior market chickens is by no means general." Dr. Woods thinks that there is a field for both the small and large producer, who living convenient to a good sized town or city market, can readily reap substantial profits in return for a little effort. Good quality chicken meat marketed in good order will always find ready buyers. In a new market it may be difficult to get topnotch prices at first, but quality will create a demand, and an increasing demand is sure to be followed by an increase in prices. It costs, proportionately, very little more, he says, "to make a roasting chicken than it does a broiler or fryer. Most of the risk or loss, from the various causes of chicken mortality, as well as the greatest cost per pound of chicken meat, comes during the first two months of the chick's life. After they are six to eight weeks old, and most of the chick dangers are past, flesh can be put on very rapidly at comparatively small cost. Six to eight weeks old broilers may bring in the market from fifty cents to a dollar each dressed, according to the season and the demand. The same birds, if caponized and held for four months longer, at a cost for food and caponizing not to exceed 50 to 65 cents, should bring from $2 to $3 each alive."

"Isn't it worth while?" he asks.

POULTRY AND FRUIT.

A flock of poultry in connection with fruit growing, gardening, or a small dairy business, is often more profitable than an exclusive poultry business. If there is a market for milk, butter, buttermilk, cream or cottage cheese, a cow or two could be kept with profit in connection with the poultry, says Wallace's Farmer. Cows and chickens thrive admirably together, and the chickens furnish a market for surplus milk.

Small fruit, strawberries especially, make a profitable crop in connection with chickens, as the poultry manure is especially beneficial to the berries, a strawberry bed makes an ideal scratching place for baby chicks after the fruiting season, and the berries ripen when the hardest work with the chickens is over. One should not go into the small fruit business, however, unless he is sure of securing pickers for the crop, and has a reasonably good market at hand. The help at hand must also be considered; there is no prospect of success in a business which requires the attention of two men and receives the care of one. If there is more work than the owner can give his personal supervision to, the profits are less than from a small business carefully supervised. One is always safe in going into the poultry business in connection with other crops, so long as he keeps out of debt, and there is no more work on the place than the help available can do as it should be done. Market gardening, growing onions especially, may be a profitable branch to take up. If a market can be found for them, the growing of bulbs is a remunerative employment with no very hard work. Here there are two crops, the blossoms and the bulbs, provided you can arrange with a seed company to take the produce.

NEW GAPE CURE.

A writer in Farm and Fireside, speaking of the horsehair treatment for gapes, says that it strikes her that it is rather a brutal plan and tells of the accidental discovery of a very successful treatment for this disease:

"Take corn-meal, enough for a good feed for all the gaping chicks on hand. Mix the dry meal with one-fourth as much black pepper, then add boiling water and stir—don't get the mixture too soft. When it is cool enough, feed the chicks all they will eat. One dose is enough if given in time; two doses will cure, anyway. You don't have to waste time attending to each chick. I have not lost a chick with gapes since taking up this cure.

"I used to treat gapes with a feather dipped in turpentine run down the chick's throat, and never saved one of them. One day when I was seasoning some potatoes the lid came off the pepper-box. The potatoes were too peppery for the table, so I fed them to about twenty chicks that had gapes badly—I thought it couldn't make them any worse off. When I went to feed them again there was no gaping and I raised all but two that a rat caught.

"Since then I have fed pepper not simply in bad cases, but with the regular rations. When the little chicks first begin to eat, I cut cooked potatoes fine, season quite black with pepper and feed this twice a week, until they get well feathered and there is no more real danger from gapes. I have cured hard cases, too."

MOISTURE FOR THE INCUBATOR.

The problem of moisture is rather a difficult one to solve. In this climate, when results are not satisfactory it is often found beneficial to increase the amount of moisture recommended by the incubator manufacturer and this is the hypothesis on which the La Belle poultry ranch, the largest hatchery in Colorado, is working. A good way to supply moisture is by the use of pans containing an inch of wet sand in the nursery trays. And as a rule a hatch can be improved by sprinkling the eggs with warm water several times when the chick are hatching. Use water fairly warm but not scalding and sprinkle with a whisk broom. Pull out the trays and sprinkle as quickly as possible and at the same time remove as many of the empty shells as can be grabbed up quickly, as many chicks are smothered by the empty shells falling snugly over the shells out of which they are trying to work their way. It does no harm to leave chicks in the incubator for a day after the hatch.—N. W. Farm and Home.

When turkeys are six weeks old I begin to feed them kaffir corn, then as soon as possible, I get them to eating whole grain corn. I first begin by feeding them small grain corn. At this age I feed them twice a day, early in the morning and late in the afternoon. When they are fed late in the afternoon I think it will induce them to come home to roost. I keep this up until the first of October, then I begin feeding them all they will eat, twice a day, until they are marketed.

Never change to a new breed simply because extravagant claims are given. It is better to try to improve the old ones.

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BY BIKE AND HIKE THROUGH NAPA.

By Nat. E. Luce.

It became the writer's pleasant duty to take a trip through these North Coast counties in the interest of the Cultivator, and in making the trip on wheel and on foot one comes in contact with the country as in no other way. One can get a closer line on soils, scenery and even climatic conditions by this method of traveling than by any other means; it brings one in direct contact with nature and nature has been lavish with Napa county. The soil rich and warm, climate surpassed by none and productiveness bountiful.

Perhaps the one great feature of beautiful Napa Valley is its system of splendid highways and stone bridges which span its numerous streams, and still they are keeping right at it making new ones and the old ones better; many counties in all parts of this great state could well pattern after her.

Transportation facilities also help Napa county to grow and prosper. Two lines of steam railways, one fine electric passenger and freight line direct to the city of San Francisco, and a line of freight boats from the head of navigation at Napa to San Francisco, with daily service.

Beautiful Napa Valley has many natural advantages to offer the snowbound farmer of the East. Here he can till the soil as he did back there, as no irrigation is needed. Abundant rainfall and a splendid soil make record crops of all kinds. Here cherries, prunes, apricots, peaches, apples and grapes grow to perfection. There are large stock and dairy farms, an intelligent, wideawake class of ranchers, who take an interest in the affairs of their county.

In scenic beauty she can well be called a gem, the main valley about fifty miles in length with several smaller valleys contributary to the main valley. These dotted with oak, pine and redwood, help to make it picturesque and charming. Napa is the county seat. It is a fine little city with paved streets, fine walks, splendid business buildings, churches, and a live chamber of commerce.

St. Helena is a most picturesque and beautiful little town north of Napa and looking up to its namesake Mt. St. Helena. Here is comfort, peace and plenty for the tiller of the soil. The largest stone wine-cellar in the world is located here.

Calistoga is a good-sized town in the northern part of the county and is a popular place for the tourists; these with many smaller villages go to make up Napa's towns and cities.

I have only briefly touched on many of the things which make Napa what she is, prosperous, scenically beautiful, rich in soil and climate, with abundance of good water for all. It is with reluctance that I leave her, for she is kind to the stranger within her gates, and at some futue time I hope to return to this gem of counties for a longer stay.

A Vineyard Scene in Beautiful Napa Valley.

NEIGHBORHOOD INTELLIGENCE.

How many instances of the following kind can be found in the United States? Professor Fraser tells of eighteen dairy farms near Kilmarnock, Scotland, where a high type of Ayrshire cows are kept. All the cows on these farms, includng heifers with their first calves, average 6,920 pounds of 3.9 per cent milk. How was this done? By the old fashioned way of entering into a mutual study and effort by these eighteen farmers to be just as intelligent in their methods of breeding and rearing their cows as possible.

Here in the United States it is every farmer for himself and the "devil take the hindermost." We could do the same thing with any breed and in any neighborhood if we would consent to work together for it. Take any creamery neighobrhood as a unit. Establish a cow testing association of 26 farmers in single groups. Unite each group on some one breed. Keep the cow testing going year after year. Let each group have a secretary and have frequent meetings to discuss the facts as they are brought out. Let the cow tester keep a record of the results with those who have silos, ventilated stables, the effect of different feeds, roughage and grain. Think of what a mass of valuable information and final conclusions could be worked out in each neighborhood group. What a long way we are from where we might be.—Hoard's Dairyman.

A Napa County Cherry Orchard.

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Bees and Their Care

STATE BEE-KEEPERS' MEETING.

The executive committee of the State Bee-Keepers' Association is planning for the next annual meeting to be held some time during the month of December, probably well towards the end. The legislation committee is laboring on a new bill which it is hoped will take the place of the present unsatisfactory one controlling apiary inspection. This has been before the association for the last two years and it is hoped the matter will be threshed out to a finish at the coming convention. If it is, it will be then placed in the hands of the legislative committee to rush through the state legislature during the coming season. The legislation committee is composed of Messrs. Burdick of Redlands, Mendleson of Ventura, Ferree of Newhall and Benton of Los Angeles.

BEES.

There is money in beekeeping if it is managed properly. Bee keeping is now being carried on with both profit and pleasure by many thousands of people in all parts of the United States, and while, as a rule, it is not the sole occupation of those who pursue it, there are many places where an experienced beekeeper can make a good living by devoting his entire time and attention to this line of work.

The average annual honey yield per colony for the entire country should be from 25 to 30 pounds of comb honey or 40 to 50 pounds of extracted honey. The money return to be obtained from this crop depends entirely on the market and the methods of selling the honey. If sold direct to the consumer, extracted honey brings from 10 to 20 cents per pound, and comb honey from 15 to 25 cents per section. If sold to dealers, the price varies from 6 to 10 cents for extracted honey and from 10 to 15 cents for comb honey. All of these estimates depend largely on the quality and neatness of the product. From the gross return must be deducted from 50 cents to $1 per colony for the expenses other than labor, including foundation, sections, occasional new frames and hives, and other incidentals, not, however, providing for increase.

These figures, however, are based on a system of good management. Beekeeping to be profitable requires hard work, knowledge and experience. Much study is required to insure success. It is unwise, therefore, for the average individual to undertake extensive beekeeping without considerable previous experience on a small scale, since there are so many more details which go to make up success in the work. Learn the ways of bees, how to handle them, and what kind of equipment is best. Then begin on a small scale, make the bees pay for themselves and for all additional apparatus, as well as some profit, and let the business grow gradually.

Above all it should be emphasized that the only way to make beekeeping a profitable business is to produce only a first-class article. We cannot control what the bees bring to the hive to any great extent, but by proper manipulation we can get them to produce fancy comb honey, or if extracted honey is produced it can be carefully cared for and neatly packed to appeal to the fancy trade. Too many beekeepers, in fact the majority pay too little attention to making their goods attractive. They should recognize the fact that of two jars of honey, one in an ordinary fruit jar or tin can with a poorly printed label, and the other in a neat glass jar of artistic design with a pleasing, attractive label, the latter will bring drouble or more the extra cost of the better package. It is perhaps unfortunate but nevertheless a fact that honey sells largely on appearance, and a progressive beekeeper will appeal as strongly as possible to the eye of his customer.

Much information along these and other lines in beekeeping can be found in a new publication of the Department of Agriculture, Farmers' Bulletin 397, entitled, "Bees." The aim of this work is to give briefly the information needed by persons engaged in the keeping of bees, and to answer inquiries that are frequently received from correspondents of the Department. It discusses the location, equipment, and stocking of the apiary, the habits of bees and their manipulation, the production of honey and wax, wintering, and diseases and injuries. It also gives such general information as how to obtain and introduce queens, laws affecting beekeeping, and journals and books on the subject. This publication can be obtained free as long as the supply lasts, by applying to the Secretary of Agriculture, Washington, D. C.; it may also be secured from Senators, Representatives, and Delegates in Congress; and the Superintendent of Documents will sell it at 5 cents per copy.

A HARD SEASON.

J. W. George of Imperial writes that it has been hard this season to keep his stands of bees up to the usual number of colonies. In fact his apiary is over 300 colonies short. The season has been the limit for losing queens.

Some sections of the valley are overstocked and suffering some because of short pasturage. The growth of the cotton industry will doubtless reduce the alfalfa acreage. The cotton plant furnishes plenty of pollen but little honey.

BEAN WEEVIL.

The bean weevil is the most important insect pest of the bean. It attacks the pod of the growing plant and continues to breed in the stored seed. It is impossible to use field measures against this pest, but it is an easy matter to prevent damage to stored seeds. All seed should be treated with carbon bisulphide at time of storing, using one ounce to each 100 pounds of seed. It is necessary to place seed in tight boxes before treating. The liquid is poured directly on top of the seed in the bin or box and the seed is then covered with carpet or old sacks. Great care should be used in handling the carbon bisulphide, since the gas is both inflammable and explosive. Never use the remedy in a room containing fire, or a hot steam pipe.

SPRAYING FOR HOPPERS.

In the Delano Record we note the following spray, given by L. W. Burr, Horticultural Commissioner of Kern County, to protect trees from grasshoppers. It's a deadly poison and we question the advisability of its use. However, in a desperate case it may be tried.

I think the "hopper" can be easily checked by spraying the trees with a solution of cyanide of potassium; say one ounce to one gallon of water; not stronger. The trees must be thoroughly sprayed, however, so as to cover as much of the foliage as possible.

Care must be taken in handling this solution, as cyanide is deadly poison, and poultry must be kept from eating the dead grasshoppers and animals must not be allowed to eat the grass on which cyanide has dripped.

It may be that this proportion may be a little too strong, but I do not think so. Try it on one tree first, and if, after twenty-four hours, the foliage shows no signs of burning, the strength is all right; if it does burn, add more water.

For vines, it would probably need to be weaker, as vine foliage is much more tender and more easily burned. I think perhaps half the strength given above, or one-half ounce to one gallon of water might do the work. Try it full strength first, and if it burns, dilute.

For "diabrotica" use as for the "hoppers," remembering to cover all the foliage. One bite is usually enough to send the predatory insect to bug heaven.

This proportion is given for our hot, dry climate only. In a damp climate it might not work as with us, but might burn the foliage badly, and I think the reason is that with us the solution dries quickly, and while the poison will remain on the foliage some little time, the corrosive action ceases almost at once, while in a damp climate it would not dry so readily and the corrosive action would be longer kept up. But try your proportion on one tree or vine first.

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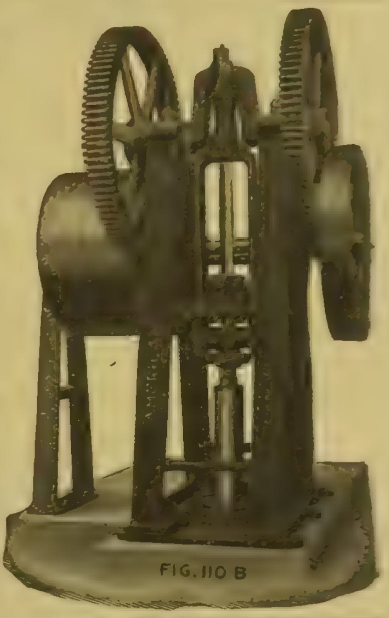

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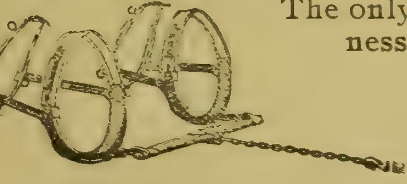

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Irrigation and Forestry

DRY FARMING LAND.

W. H. Babcock of Los Angeles, who was the pioneer of extensive wheat growing in Washington and the first man in the Pacific Northwest to get into the 100,000 bushels a year class of producers and claims the world's championship for conquering sand dunes, has been visiting friends in Spokane for a week. He is the typical pioneer of the west, and he is as rugged today as in the days when sturdy men blazed the way through the passes to discover the rich country on the west side of the Rocky mountains.

While in Spokane he visited the headquarters of the Dry Farming Congress in company with E. F. Benson, land commissioner of the Northern Pacific Railway company, who years ago sold several thousand acres of sand dunes for almost a song to Mr. Babcock, provided he would seed the land and stop the sand from drifting upon the tracks. Mr. Babcock still holds a large acreage of this land in Walla Walla valley, and it is today, as it has been for years, producing high grade wheat.

"I formerly lived on Eureka flats in the Walla walla Valley," said Mr. Babcock. "Those flats were wide expanses of sage brush and sand dunes in the early days and a drearier place could hardly be imagined. I settled there 30 years ago and I am returning to find it one of the finest and best cultivated districts in Washington. A wonderful transformation has taken place. Little did I realize when I tried to get a living off that sandy land that I would live to see it a veritable garden of Eden. But it's so, and it does my heart good every time I return on a visit to look over the country. Mr. Benson shoved it off on me, and I thought many a time he was trying to make me ride a goat, but I beat him to it and I guess he would like to own some of it today."

"I was the first farmer in that district to adopt dry farming. I cultivated so as to keep the weeds out, and I cultivated thoroughly, too. I had to, as it was a country of nothing but sand, sage brush and weeds. I used to harrow extensively, and I found it a Crack-a-jack weed-killer. I plowed at various depths, because it was a sort of an experiment on my part, and I followed up the harrowing by hoeing. It told every time.

"The land was a rounding knoll of drifting bluish sand, which blew onto the railroad track with every wind and drifted like snow. Every time we had a heavy wind, the track would become impassable and it got to be a steady job for shovelers from Walla Walla to keep the track clear. Trains would be stalled there for hours; sometimes all day while the laborers were shoveling the sand off the roadbed.

"Mr. Benson talked with me a dozen times on the possibility of growing some kind of vegetation that would keep the sand dunes from shifting, and I finally agreed to experiment and said I would pay 50 cents an acre for the half section if I could make anything grow on it.

"I seeded it to rye in September, but the dry weather and the wind in the fall made my work almost a total failure. There were a few spots where the sand had not drifted so badly that made a little growth. This encouraged me and the next year I seeded 80 of the 320 acres that was wholly sand dunes and I got a part of a crop. Then I concluded I had mastered the sand, and I seeded the entire tract and got an additional acreage to grow. The next year we had a wet fall and the entire half section did well and I threshed 18 bushels of rye to the acre.

"I did not dare to plow that land for four or five years, but continued to crop it each year; first to rye and then to wheat, until the rolling sand dunes were recognized by everybody on Eureka flats as being a profitable wheat field. Since then I have plowed and cultivated it the same as any other land in the country and it is growing some of the finest wheat. This year, despite the drouth, I had a big yield, all due to the application of dry farming methods."

FOREST FIRE PROTECTION.

One of the lessons which will finally be drawn from the trying experience of the present forest fire season, in the belief of officials of the U. S. Department of Agriculture, is the need of wider organization among private owners of timber to safeguard their holdings.

It is pointed out that already in the Northwest, both on the Pacific Coast and in Montana and Idaho, timberland owners have formed themselves into associations which assess the members on an acreage basis and thus meet the cost of maintaining a regular patrol and fire-fighting organization. Only by getting together can private owners usually assure themselves protection, for fire is no respecter of boundary lines and the man who undertakes to keep it out of his own timber will want it kept out of his neighbor's too. Wherever possible the Government's forest officers co-operate with the force put in the field by the associations, so that the employees of the Government and those of the private owners are handled practically as a unit in fighting the common enemy.

This co-operation is advantageous to both sides. Protection of the National Forests necessarily carries with it a good deal of protection of adjoining or interior holdings. If the private owners would everywhere shoulder their reasonable share of the burden, the public would gain both through more general forest conservation and through relief from the necessity of paying for the protection of private timber in order to protect its own.

IT WOULD FIDGET.

"The word 'fidget,'" explained the teacher, "means to move about. Now, children, I want one of you to step to the blackboard and write a sentence containing the word 'fidget.'" Forth stepped the little Wise boy, who write, "This store will fidget June first." "But who ever heard of a store fidgeting, Johnny?" asked the teacher. "I don't know; but the sign on a store downtown says that it will move about June first."—Judge.

Queries and Replies

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Tuberculosis.

I fear my cow has tuberculosis. Is there a state officer who will test her, and is the test sure? She does not cough, but grows exceedingly thin during the winter, then fattens up well during warm weather. Is raising valuable heifer calf. Is there danger to the calf from drinking her milk?—Subscriber, Lodi.

I should certainly feel as you do about this cow and would have her tested at once. There is no state officer for this purpose. If there was one I doubt if you would wish to have him as the matter would become very public. No one really desires to keep diseased cattle, but when they have them it is rather cruel to make them the butt of public remarks, especially when they are doing their best to find out the trouble. Any veterinarian can test a cow or anyone that can give a hypodermic injection of the tuberculin into the side of the neck and then take the temperature by the rectum. I would have a good man do it the first time and stay to see the whole process. After that you can do it yourself at any time. In this case listening to the lungs as the breath enters and leaves them may show you exactly where the trouble lies. Many cows that have this disease for years grow better in the warm weather and worse each winter. These are the dangerous subjects as they deceive as to their true condition. The tuberculin test is certainly very reliable and the per cent of failure is too small to consider. The case it fails in is not one that is dangerous. It sometimes is confused on cases of very advanced stages, the hectic fever and the reacting of the tuberculin coming into conflict. These cases are always those that physical examination would exclude from the herd as diseased. The tuberculin acts as a detective in running down the cases that are not advanced enough to attract notice and yet are spreading the disease to other cows. Boiling the milk should destroy the bacilli. Boiled milk is good for the pigs but not at all pleasant as human food or is it wholesome to feed to the calves.—M. E. S.

Keeping Fruits in Vacuum.

Is it possible to keep fresh articles a room from which the oxygen has been removed by burning chemicals, the place to be shut and air tight? you have concrete cellar, air tight, it possible to pump out air so as cause a vacuum that will preserve perishable fruits? Has this ever been tried and with what results? How strong a machine would be required and how much pressure does a vacuum produce to the square inch?—F. H., Brawley.

Some fruit was shipped from California to Eastern points in ordinary refrigerator cars prepared by burning chemicals so as to remove oxygen, but we believe this did not prove a practical success. A similar process has been recommended and at times powders have been sold as food preservatives, and we believe the secret all these has been the removal oxygen from around food. While in theory, and at times in actual practice, fair results may be obtained, on the whole such efforts have been failures so far as we have ever learned. The removing of air from the concrete cellar would be absolutely impractical and much more expensive than ordinary cold storage. The pressure per square inch in perfect vacuum is nearly 15 pounds—14.7 to be exact.

Seeding Alfalfa.

What is the best time to sow alfalfa, and is there danger of too deep planting?—O. S., Reedley.

The season has more to do with successful seeding of alfalfa than the calendar months. We seed in this section, Fresno county, any time after Christmas up to the middle of March. We avoid sowing in a frosty spell. These come when it is dry and add to the dryness of the soil. Last spring the long dry spell injured much of the sowing and good stands were the exception. The field should be plowed deeply as soon as possible in the fall, harrowed and let alone until about a week before planting. Then run over it with either a shallow set plow or with a cultivator, harrow and sow the seed lightly and brush it in lightly with a brush harrow. If you have a drill to put the seed in with, it will only take about half as much seed to get a good stand. Alfalfa seed follows the usual rule in sowing, one and a half times the size of the seed under the loose soil.—M. E. S.

Leaking Milk.

Cow three years old, though not fresh, leaks milk when lying down. Is there remedy or must she go to the butcher?—E. D., San Jose.

Try using a little collodium on the end of the teats after milking. If this does not hold the milk enough and the cow is milked often enough and not fresh, I know of nothing else to do for her that will overcome this trouble. The loss, however, may not be as great as you think as the fore milk of the cow is poor in quality. The fore milk or first quarter of the milk drawn often is not over two per cent butter fat while the last of the milk is five to seven per cent fat.—M. E. S.

Diseased Peach Roots.

I send roots and twigs from peach trees. What is the cause of enlargement of roots and remedy —J. W. F., Clovis.

This question was referred to the Southern California Pathological Laboratory at Whittier and Mr. Clayton O. Smith writes:

"From the specimens sent it is not possible to tell what the exact trouble may be. It does not seem to be crown gall or root knot and Professor Quayle says it is not due to insects. The peach twigs did not seem to show any definite trouble that could be recognized. I would suggest that the source of this trouble might be found at the roots."

Milch Goats.

Can I secure milch goats from Cultivator readers?—J. H. R., Yuma.

See advertisements on liner page of last week's Cultivator.

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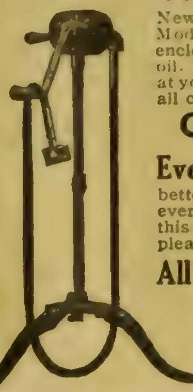

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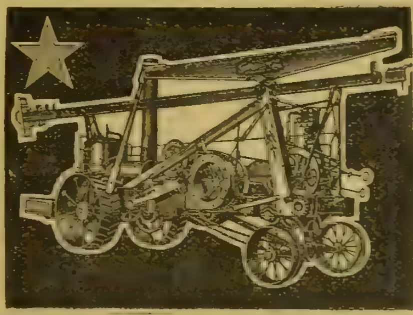

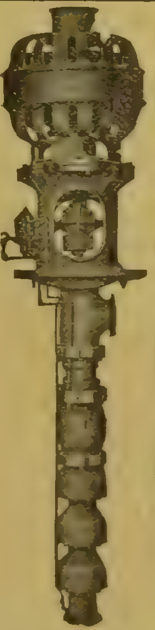

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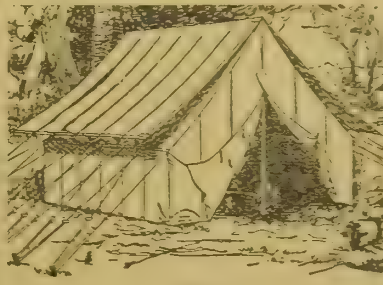

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Alfalfa.

Which is best variety to plant in sandy loam land in this district? Is the Arabian satisfactory in this hot climate, and where can seed be purchased?—Subscriber. Porterville.

So far as tested there is no variety of alfalfa which has stood up to the ordinary Chilean under all conditions. The Arabian has shown up remarkably well in Imperial Valley, but, we understand, has proved rather short lived. The Turkestan has been tested in your section and where shortage of water or cold winters prevail, it has done rather better than the Chilean, but where conditions are right, we presume the ordinary variety will do as well as any. The Arabian seed is not to be had at the present time, but we doubt not the Department of Agriculture will import quantities of it as it did last year. The distribution last year was made through the different seedhouses in this state about January first.

Turkeys.

Is there a turkey almost as large as the bronze and of a different color?—Subscriber, Laton.

The standard weight for bronze turkeys is 36 pounds for male and 20 pounds for hen; for Narragansetts, male 30, hen 18; Slates, Buffs and blacks, 27 and 18; White Hollands, 26 and 16. These last named doubtless rank next to the bronze in popularity.

Dipping Hogs.

Please inform me as to dips for hogs.—Subscriber.

The dip is to be preferred although some have had excellent results from spraying. Of course, the dip calls for the construction of a vat into which the hogs are driven through a chute. The dip may be purchased of standard quality known to work well. In small quantity this is probably to be preferred. The question is too extended for complete treatment in this department and we would recommend writing for Bulletin 74, B. A. I., Dept. Ag., Washington, D. C.

Green Manure.

Is a green crop plowed under with a dressing of fertilizer an equivalent to barnyard manure (for soil as well as trees and fruit) in case of an orange grove?—Subscriber, Meridian.

As to whether the green crop would be equivalent to a dressing of fertilizer would depend upon the crop; also upon the kind of manure applied and the amount. Unless well irrigated the green crop will depend upon the rains, also upon the temperature during growing time. Cost considered we presume more humus can be added to soil through green crop than through manuring.

Gypsum.

Will it pay to apply gypsum to grain lands for wheat or oats? At what stage of the crop should it be applied and in what quantity?—J. C. C., Modesto.

On some soils the application of gypsum sets free potash and in this way stimulates plant growth. In some cases the benefit has been so pronounced as to appear almost miraculous; 200 or 300 pounds per acre is sufficient though some apply heavier.

Diabrotica.

I send bugs which are eating blossoms and beans, also the leaves of peach trees. What are they?—Subscriber, La Grange.

This query was referred to Mr. E. O. Essig, Horticultural Commissioner of Ventura county and he answers:

"The insect is commonly known as the California Flower Beetle (Diabrotica soror). The larvae are small white grubs which sometimes injure root crops in the gardens, while the adult feeds on a large number of plants. As yet this insect has never been regarded as a real pest in this state and no preventive measures are practical or necessary."

GRAIN MOTH.

A subscriber at Orange recently sent specimens of barley infested with small "fly weevil" also small specimens of moth which is the adult form. These were forwarded to Mr. E. O. Essig, Horticultural Commissioner of Ventura county and he reports:

The Angoumois Grain Moth, (Gelechia cerealella Ol.)

For many years this moth has been a most serious cereal pest in Virginia and nearly all of the Southern states. During the year 1902 the pest became more injurious than ever, spreading to the Northern states and California. Strange that so little has been said of it in this state. It must signify that little damage has been done so far. While this may be the case, it is always well to be on the lookout for such pests and to know them when they do come. The following report taken from the U. S. Dept. of Agriculture Yearbook for 1894, gives an excellent description of the moth, its work, and methods of control in granaries:

"The Augoumois grain moth derives its name from the province of Anguomois, France, where it is said to have been injurious for nearly a century and a half. It probably originated, with the granary weevil, in the Mediterranean region, and possibly in southern Europe. In this country it is familiarly, but incorrectly called the 'fly weevil.'

"The history of this insect in Europe dates back to 1736, when Reaumur found it damaging stored barley in France, but the moth was not described until 1789. In America an account by Col. Lamdon Carter, published in 1771, brought out the fact that injuries from the species began iin North Carolina as early as 1728.

"From the seat of its original introduction this moth, has spread to the neighboring states in the south, where it does incalculable damage, and to the southern portion of the northern states, where it is less injurious. It is occasionally troublesome as far north as Canada, and has been reported as doing serious damage in Australia and India. The work of the writer at the Columbian Exposition would indicate that it has now become cosmopolitan, as it was found there in a majority of the cereal exhibits of the tropical and warmer countries.

"In Europe the favorite food of the Angoumois moth is said to have been barley; in America its chief injury is to corn and wheat, but it infests also all of the other cereals, as well as buckwheat, chickpeas, and, it is said cowpeas. It has been estimated that in six months grain infested by this moth loses 40% in weight and 75% of farinaceous matter. In addition to the loss in weight, the grain is totally unfit for food, and it has been said that bread made from wheat injured by this moth was the cause of an epidemic in certain regions of France infested by this species.

"This insect is a small moth of the family Gelechiidae and resembles somewhat our familiar clothes moths, for which species indeed, it is often mistaken. It is light grayish brown in color, more or less lined and spotted with black, and measures across the expanded fore wing about half an inch. The hind wings are bordered with a long delicate fringe."

"The moth normally deposits its eggs in standing grain, singly or in clusters of from 20 to 30. The eggs are red in color and hatch in from four to seven days, when the minute caterpillars burrow into the kernels and feed on the interior. A single larva inhabits a grain of the smaller cereals. but in maize sustenance is afforded for two or three individuals. In about three weeks' time the caterpillar attains full growth when, without leaving the kernel, it spins a thin silken cocoon in which it transforms o a chrysalis, the moth emerging a few days later, the entire period from egg to adult embracing in summer rom 4 to 5 weeks. After copulation, he moth soon deposits her eggs for another brood, and in this manner several generations of the insect are produced in the course of a year. The lder writers believed that the pecies was normally double-brooded, ut as the insect breeds continuously n the harvested grain, there is now n irregular development which is influenced by temperature. In this titude there are probably five or six enerations annually. Mr. H. E. Weed stimates that in the warmer climate f Mississippi, where the insect can reed uninterruptedly during the inter months, there are at least 8 enerations.

"In some respects the Anguomois rain moth is more troublesome than ny of the other granary insects. ven as far north as central Pennsylvania it lays its eggs on the grain in e field, and it is, therefore, impossible to entirely prevent infestation.

"The custom of leaving the harvested grain in stacks in the field for eeks before thrashing, in vogue in me parts of our country, is the use of perhaps the greatest proportion of the infestations. The introduction of the insect into the granary rough this channel may be practically prevented in the case of the aller cereals by harvesting and rashing as soon as possible after e grain reaches maturity. If, after e removal of the old grain from as, these are thoroughly cleaned d fumigated before the introduction of fresh grain, the chances of injury are reduced to a minimum.

"This, as well as other granary oths is soft, delicate, and easily ushed, and is unable, when buried neath a large mass of grain, to extricate itself; hence storing the grain bulk and stirring, shoveling, or tating by other means is productive of the best results with this insect."

The remedies are:

rbon Bisulfide.

n barns that are reasonably tight d infestation slight, use 1 pound for ery 700 cubic feet of space. In her open barns, with bad infestation use 3 pounds to every 700 cubic t.

drocyanic acid gas.

n tight barns use 2 ounces of cyanide per 100 cubic feet. In open barns uble this amount. Proportions of nide, water, and acid are as follows:

otassium Cyanide.

nide	1 ounce
Acid	1 fluid ounce.
ter	3 fluid ounces

odium Cyanide.

nide	1 ounce
Acid	1½ fluid ounces
ter	2 fluid ounces

The Ornamental Garden

THIS MONTH.

This is the best bulb planting month of the year and the seedsmen are offering a most attractive line of Dutch bulbs. Those in the home garden which have not been taken up may be divided. Amaryllis if not yet started may be taken up and a half dozen bulbs secured in place of each clump. This may possibly lessen the number of flowers the first year but will ultimately result in material increase in stock. Gladiolus taken up earlier and fully ripened off will now start quickly and give midwinter bloom. Humboldt lilies and other natives of our mountain canyons afford opportunity for extending the varieties in our gardens.

Of the annuals, plant stocks, pansies, cineraria and primula. Roses which were dried off earlier and have not yet started growth may be used for making cuttings at this time. Surer results will be obtained, especially in frosty sections, if this is deferred until the wood is ripened again in December and January. Where the ground is moist and the plants may be affected by early frost, it may be well to withhold water, but on the other hand, care must be exercised to keep sufficient supply, for this late in the season there is in most sections no subsoil moisture, so that if water is entirely withheld from the surface delicate plants will surely suffer.

Chrysanthemums are now in their glory and the application of nitrate of soda or any quick acting fertilizer will increase size of bloom.

Those in "frostless" sections who are depending upon poinsettias for Christmas bloom will be wise to watch the cool nights of the latter part of the month and have coverings ready for their favorite flower. The poinsettia will stand absolutely no frost so that protection may be necessary at this time in all sections.

MAKING MOST OF THE PHLOX.

Nearly everyone can grow phlox and have what is regarded as great success, yet few, even among professional gardeners know how to coax the greatest growth and beauty out of this plant.

Hardy phlox can be transplanted at any time, preferably in the fall or early spring, by dividing old clumps, or they can be grown from seeds planted very shallow as soon as they are ripe. When allowed to become dry they are more or less disappointing in germination, so that we may say that division is the best method. If string divisions are taken early in April and planted about fifteen to eighteen inches apart and the tops are pinched back when about four inches high to make them spread and not more than two or three growths are allowed, they will give a very large head of bloom with a maximum of florets. Give clean culture and an occasional dressing of manure or manure-water.

By this method of culture the phlox becomes an exceptional flower when compared with the big clumps that most people allow to grow. To get best results they should be planted new each fall or spring and given plenty of water while in bloom.

When big masses of plants are desired, about one-third of the stems should be pinched back about May first and about three weeks later another third should be pinched back. This will produce a much longer season of blooming than when they are allowed to grow naturally.—Farm World.

FAMILY LIFE OF BIRDS.

The majority of our birds are monogamous, and so far as many of them are concerned the marriage seems to be for life. With touching fidelity the mates stay together in life or death. The nutcrackers and finches, for example, can scarcely be separated for minutes. If one dies there is great grief. If the female dies the male nearly always remains single during the remainder of the season. It sometimes occurs that he will not forsake his dead mate, but sits beside the little corpse until driven away. The females, on the other hand, overcome their grief more easily, and their widowhood rarely lasts long. A case in point where one of a nest of magpies was found dead, evidently from eating from a poisoned fox, but no later than in the afternoon of the same day the widow led a new groom to her home.

PANSIES WANT TO BE PICKED OFTEN.

The pansy is one of the most satisfactory flowers to grow in one's garden. It blooms almost all of the time, if properly cared for and it flowers very soon; often when the plants are not over three inches in height, and the more one picks the more one has. The old rhyme is well carried out in this flower:

"The more you pick and give away,
The more you'll have another day."

If possible select your bed with an eastern exposure and partly shaded. If convenient get leaf mold from the woods, or good, rich earth from under the manure-pile. Be sure it is fine and porous.

Buy your pansy seed from a reliable florist or seedsman and get the best mixture of German pansies. It pays in the end to buy the finest. Plant the seed in rows, rather thickly, as they can be thinned out. Let the rows be a foot apart.

After sowing, water the ground well and spread a width of muslin over to keep the earth from drying out while the seeds are germinating.

When the tiny plants put forth four leaves, thin out and transplant to an equally as fine spot as you selected for the sowing of the seeds. and with plenty of water, and kept free from weeds they will grow luxuriantly.

KITTY'S ARITHMETIC.

Seven sheep were standing
  By the pasture wall.
"Tell me," said the teacher
  To her scholars small,
"One poor sheep was frightened,
  Jumped and ran away;
One from seven—how many
  Wooly sheep would stay?"

Up went Kitty's fingers,
  A farmer's daughter she.
Not so bright at figures
  As she ought to be.
"Please, ma'am?" "Well, then, Kitty,
  Tell us, if you know."
"Please, if one jumped over,
  All the rest would go."

PLUMBING SASH DOORS
DIAMOND LUMBER AND WRECKING CO.
HARDWARE BUILDING MATERIAL

7th and Central Ave.
Phones: Main 259 or F4092.
Los Angeles

SPECIALS

Oak fixtures for stores. Shelving with plate glass doors, counters, tables, etc. This is a snap; all size windows 50 cents and up. Doors all sizes, locks and hinges 75 cents and up.

Bath tubs $10.00 and up; toilets $7.50 to $15.00.

Half-inch pipe, 2½ cents; ¾-inch pipe, 3½ cents.

We carry all sizes up to 6-inch.

Roofing Paper, Guaranteed, $1.10 per Roll, with Paint and Nails

Shakes $10 Per Thousand.
Shingles $2 Per Thousand
Full Counts.
Nails, 4 cents per pound.
Stain, 50 cents per gallon.
New lumber, $15 per thousand.
Second-hand lumber, $8 and up.
Plumbing goods, a complete line.
Let us quote you prices. We have two fine pumping plants for sale.
We Will Be Pleased to Quote Prices.
Write Us.

New Crop
SEED OATS

Genuine
Texas Red Rust Proof
direct from Texas.

Ask us for samples and prices before planting.

Field, Garden and Flower Seeds.

West Coast Seed Co.
Importers and Dealers
111-113-115 Winston St., Los Angeles
Between 4th and 5th Sts. near Main

Cows and Heifers

TWO BULLS. TEAM WORK MULES
AT 10 O'CLOCK A. M.

Tuesday, Nov. 15

on the Hardsock Ranch, one and one-half miles south of

THORNTON

on the Santa Ana electric line, one and one-half miles north of Los Alamitos Sugar Factory. Take Santa Ana electric cars to Thornton Station, teams in waiting.

This herd consists of 16 head of fine cows—Jerseys Holsteins, and Durhams, all in fine condition fresh and coming fresh, all young and choice dairy and family cows. The milk from these 16 cows sold to the Los Angeles Creamery Co., netted the owner $297.35 for the month of September. Eight head of fine heifers all of which will be fresh soon. all out of the best cows on the ranch. One Guernsey bull coming two years old, out of cow testing 6.8. One two-year-old thoroughbred Holstein bull. One team work mules.

The owner is retiring from the dairy business and every animal positively must be sold to highest bidder, without reserve. Cows can be seen at the Ranch any time prior to sale. Terms cash. Free lunch at noon.

W. E. SMITH. OWNER.

Mam. Bronze Turkeys

Large bone, long body, full breasted well marked, early maturing stock from the best prize winning Eastern strains. Toms and hens for sale. Prices Right.

GEO. A. SMITH, Corcoran, Cal.

Pure
Alfalfa Seed

Good crops cannot be grown from weak or foul seed. Many fine stands of alfalfa have been ruined by the love vine and dodder that was not removed before sowing.

We have installed an alfalfa seed-cleaning machine that insures absolutely pure seed, and our stock is selected from only strong and healthy fields.

Germain seeds are not always cheapest in price, but you will surely get a dollar's worth for a dollar and be certain of the quality.

Germain SEED & PLANT CO.
LOS ANGELES

BUY SEEDS BY NAME

If you were buying apple trees you would rather pay a reasonable price for named varieties, guaranteed true to name by a nurseryman than to buy unnamed trees just because you could get them cheap. Did you ever think of the fact that this same argument applies to seeds? Branded and guaranteed seeds are the safest and in the end the cheapest. There must be quality in every package, for the maker must make good goods or he can't stay in business. When you buy Lilly's Best Seeds, Northern Grown, you buy seeds that are true to name, pure and of high germination.

Don't take chances. Send for catalog. **CHAS. H. LILLY CO., SEATTLE,** for over a decade the leading Seedsmen of the Northwest. No matter where you buy, ask and insist on Lilly's Seeds, and if your dealer does not sell them write to us and we will supply you. Lilly's "Crop" Book is of great interest to farmers. Free

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To Prospective Automobile Buyers:

You naturally wish to purchase the highest grade car you can get for your money, and you naturally want a higher grade car than the dealer can afford to sell you for the amount of money you wish to pay—we will meet your views for a short time.

We have a limited stock to dispose of—all high grade—and all prices to meet the needs of moderate priced car buyers.

Whiting, Davis and Westcott Cars
in Two and Five-Passenger Models

These are not shopworn cars, they have never been driven a mile, and are the latest models received.

We have sold the lease of our garage and have not at present the necessary equipment and room at our store to properly handle automobiles, so we offer you the opportunity to buy a car of higher grade than you ever thought of owning and at a price no higher than is charged for a medium grade car.

Call at Newell Mathews Company, 200 North Los Angeles Street, Los Angeles, Cal., or write us, stating whether you wish to buy a one-seat or two-seat car and we will send you full information or have our salesman call.

Newell Mathews Company

General Agriculture

VALUE OF LIME IN AGRICULTURAL PRACTICE.

It has, of course, long been known that the application of lime to most soils leads to increased productiveness, but the value of lime in this connection is not fully appreciated, even at the present time. Its action on the soil is both physical and chemical, and, in addition, it undoubtedly exerts an important direct influence on the growth of the lower organisms, as well as of the agricultural crops. It is not necessary to state in detail here the important action of lime on the physical properties of the soil, as these have been pretty well recognized for some years. One of the most important effects of lime is the neutralization of organic acids as rapidly as these are formed in the soil, by the decomposition of vegetable matter.

Lime, in this connection, has no substitute, and it is particularly efficient for the reason that, although it promptly neutralizes any acids which are formed, it has no decided alkaline reaction.

Lime is known to be an essential plant food, and the average soil is more likely to be deficient in this element than has been formerly believed. It also exerts a very important action in rendering available the potash, phosphoric acid and nitrogen, which would otherwise be beyond the reach of the growing plant. It also forms an important food material for the lower organisms in the soil, and thereby favors the processes of nitrification and other bacterial changes which are extremely beneficial to the growing crop.

In recent years the importance of maintaining a proper balance between the various elements of plant food, including those elements which are generally considered as less essential, is being more extensively recognized, and lime is one of the principal agencies in maintaining this balance between the different elements. Its efficiency in this connection depends both upon its capacity of neutralizing acid radicals with which some of the other elements of plant food are combined, and, also, in preventing an injurious action of some of the other basic elements when present in excess, particularly potash and magnesia.

This statement will perhaps furnish a brief outline of the ways in which lime may be beneficial when applied to agricultural soils.—W. W. Garner, Physiologist, U. S. Department of Agriculture.

AGRICULTURE IN ALASKA.

Would you care to run a truck farm with strawberries selling at $1.25 to $2 a quart, cucumbers $2 to $5 a dozen, celery 50 cents each, tomatoes 50 cents to $1 a pound, and other products at proportionate prices? Or would you prefer general farming, with a few pigs and chickens as a side line, with hay selling at $60 to $100 a ton, hogs 30 cents a pound, young pigs 75 cents a pound, and eggs $2 a dozen?

These prices are received in Alaska under favorable market conditions, but the prospective settler should consider the difficulties and expense of farming as well as the high prices of his products.

Alaska is not generally given much consideration from an agricultural standpoint, and yet, despite the rigorous climate, a large variety of grains, small fruits, and vegetables are being successfully grown. Experiments are being made with tree fruits, but the results thus far have not been very encouraging. The work conducted by the government with grains at the Rampart Experiment Station has been an unqualified success. Varieties of nearly all grains have been found that grow well.

A cattle-breeding station at Kodiak is working to develop the milking qualities of Galloway cattle, as they are the most hardy and best adapted to the climate. It is believed that this will be accomplished. The object will be to furnish hardy, acclimated cattle to settlers in the country at a price not higher than the cost of taking them from the United States. The coast region is well suited to the raising of cattle.

There are several successful farmers in the vicinity of Fairbanks, some of whom are general farmers and others are running market gardens While they are meeting with some failures of parts of their crops by frosts and cold and wet summers, ye they are learning by experience t overcome many of the discouragements of the climate.

The climate shows a wide variation, from 90 degrees Fahrenheit a Rampart, on the Yukon river, i July, with an average for the mont of 63 degrees, to 69 degrees below zero at Fort Egbert, near the Klondike gold fields, in January, with a average for the month of 40 degree below zero. The coast towns ar mild for that region, neither Sitk nor Kodiak reaching zero during 190 while Juneau only reached 5 degree below in January, with a daily mea for the month of 14.15.

CORN SHIPMENTS FROM AFRIC

The shipment in one vessel of 6 400 tons, or 67,000 bags, of corn fro Durban to Mexico in August indicate the extent to which the export maize has increased in South Afric says Vice-Consul George L. Foster Cape Town.

During the first six months of 191 163,780,225 pounds of maize were e ported, valued at $1,654,371, as con pared with 16,222,578 pounds, value at $182,708 in the corresponding p riod of 1909. It is expected that th calendar year 1910 will far surpa any previous year for the export maize from South Africa.

The average price at which mai is being purchased in the princip producing sections of South Africa- the Orange Free State and Transva —is $1.70 per bag of 200 pounds f round yellow and $1.82 to $1.85 p bag for white flat.

In addition to the shipment me tioned some very large cargoes a being sent to England.

PARCELS POST.

They do these things differently England. In London, as the Woma National Daily of St. Louis show the British parcels post system ables a family to make an arran ment with a farmer to send, for instance, a dozen fresh eggs by mail every morning. Boxes are made especially for this purpose and the cost of carrying a dozen eggs from any point in England to the front door of any house in London is five cents in American money. The express companies in this country have prevented the establishment of this system, because they carry these small packages and charge an excessive toll. Now are the packages safe in the hands of the express companies? The writer of this article has had frequent occasion to send packages by express to an eastern city. In almost every case, the package has been opened and the contents ransacked. Whole articles have been stolen from them, not once, but repeatedly, and in one case a sum of money amounting to $25 was abstracted. No redress could be obtained from the express company and the excuse was made that this robbery was a frequent thing and could not be prevented. And yet, the express companies absolutely refuse to allow the government, with its better means of preventing fraud, from establishing a parcels post system. —The Grange.

SESBANIA ACULEATA AS A GREEN MANURE.

Several notes have appeared recently in the Agricultural News, dealing with Sesbania aculeata as a green manure. Several species of Sesbania are used in India as a green dressing for tea; among these, is dhaincha which is S. aculeata. The two species of Sesbania common in Southern India are S. aculeata, and S. aegyptiaca, which is being most successfully used in connection with tea cultivation in the Wynaad. For this crop, it is sown just before the monsoon, and after three or four months, when it is about 4 feet high, it is cut down, and used as a mulch, or is turned into the soil. Mr. Anstead states that the roots of all the species are smothered with nodules in dense masses—more so than in any other plant that he has seen.

As has been suggested before, observations and experiments with the different species of Sesbania in the West Indies would be of much interest, especially in relation to their possible adoption as plants for green dressings.

Baron von Mueller in his "Select Extra Tropical Plants," says that both S. oculeata and S. aegyptiaca are adapted to semiarid or desert regions, which fact itself lends interest to the plant in Southern California, and especially in the citrus fruit belts, where green manuring is certainly a live subject.

PARCELS POST BILL.

The following gives the text of the parcels post bill introduced in the House of Representatives by Congressman Sulzer during the last session. It is entitled, "A bill to reduce postal rates, to improve the postal service, and to increase postal revenues."

"That the common weight limit of the domestic postal service of the United States is hereby increased to eleven pounds, the common limit of the Universal Postal Union, and that in the general business of the post office the one cent an ounce rate on general merchandise—fourth-class mail matter—be, and is hereby, reduced to the third-class rate, one cent for each two ounces or fraction thereof.

"Sec. 2. That the rate on local letters or sealed parcels posted for delivery within the free-delivery services is hereby determined at two cents on parcels up to four ounces, one cent on each additional two ounces; at nondelivery offices, one cent for each two ounces.

"Sec. 3. That all mail matter collected and delivered within the different rural routes of the United States is hereby determined to be in one class, with rate, door to door, between the different houses and places of busines and the postoffice or post offices on each route, as follows: On parcels up to one twenty-fourth of a cubic foot, or one by six by twelve inches in dimensions and up to one pound in weight, one cent; on larger parcels up to one-half a cubic foot, or six by twelve by twelve inches in dimensions and up to eleven pounds in weight, five cents; on larger parcels up to one cubic foot, six by twelve by twenty-four inches in dimensions and up to twenty-five pounds in weight, ten cents. No parcel shall be over six feet in length, and in no case shall a carrier be obliged to transport a load of over five hundred pounds.

"Sec. 4. That on all unregistered prepaid mail matter without declared value an indemnity up to ten dollars shall be paid by the Postoffice Department for such actual loss or damage as may occur through the fault of the postal service, and this without extra charge. Certificates of posting shall be provided on demand. On registered parcels of declared value, and on which the fee for registration, insurance, and postage has been duly prepaid, the Postoffice Department shall pay the full value of any direct loss or damage that may occur through the fault of the postal service. The fees for insurance and registration shall be as follows: For registration and insurance up to fifty dollars, ten cents; for each additional fifty dollars, two cents. No claim for compensation will be admitted if not presented within one year after the parcel is posted."

BEAN CROP OF THE STATE.

The bean crop of this state is a big item on the list of products and about one-half are produced in the counties of Superior California. According to a statement in the Bee, the acreage and number of bags is as follows: Superior California counties, 60,500 acres, and 1,025,000 bags; central countries, 19,500 acres, and 280,000 bags; Southern California counties, 62,000 acres, and 1,200,000 bags. The varieties of beans produced are as follows: Lima, 1,100,000 bags; large white, 508,000; small white, 140,000; pink, 439,500; Bayo, 121,250; blackeye, 70,000; other varieties, 124,250.

With an increase of but 1,000 in the acreage, the production of beans in several Superior California counties, including upper Sacramento, has increased from 150,000 bags in 1909 to 175,000 bags for this year. This is an unusually good showing. The figures given are for the number of bags produced in Yolo, Yuba, Sutter, Butte and upper Superior California counties all along the Sacramento river.

A fruit grower at Rosewell, New Mexico, recently shipped a car of apples which netted him $1,000.

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MOTOR CARS
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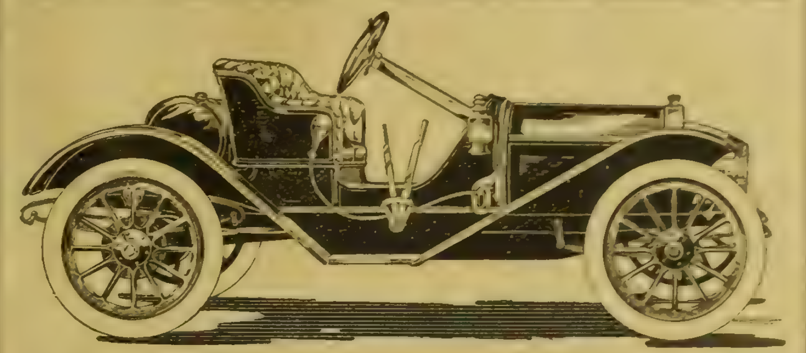

The best value, quality considered at anywhere near the price. A medium priced car with motors equal to those used in many $3,000 cars,–fast, powerful, silent–all the good qualities that a car should have. Scores of satisfied owners in Southern California.
Our traveling man has just written us from San Luis Obispo as follows:
"Arrived here 5 P M today. Had good trip. No trouble with the machine at all and she is a dandy for climbing mountains"
The Oakland is made in 30 and 40 H. P. Roadsters and Touring cars. Decide now to try these cars out before you buy.
Hawley King & Co. Los Angeles
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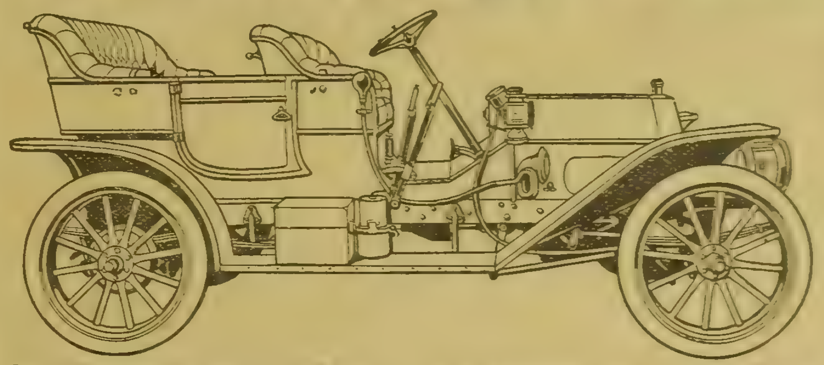
DUROCAR The Car for the Farmer



2-Cylinder, 26 H. P., $1500 4-Cylinder, 35 H. P., $1750
Made in Los Angeles and factory open to your inspection. Come and see us.
Both Phones Durocar Mfg. Co., 935 S. Los Angeles St. Los Angeles, Cal.

PLANT NOW for your fall and winter garden. To make a success with your garden use Morris & Snow Seed Co.'s Pedigreed Seeds.
Wet your ground well and get it ready for Cabbage, Cauliflower and Onion seed-beds. We recommend our French grown Winningstadt Cabbage, California Pearl Cauliflower and Early White Queen and the Bermuda Onions as the best varieties for shipping and marketing.
We make a specialty of Flower Seeds. New Crop Pansies and Ten Weeks Stock are now in also. Winter or Christmas-Flowering Sweet Peas in variety.
Burr Clover and Alfalfa Seed.
Ask for samples and prices.
Send for Our Catalogue
MORRIS & SNOW SEED CO. 425 So. Main Street Los Angeles, Cal.

BUY A MOLINE

A car load of 1911 Models just received made in two models. Call or write.
WM. GREGORY
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Money Making Little Liners

In this department we will insert your advertisement under a classified head for 1½ cents per word per issue. No ad accepted for less than 25 cents. Our classified columns are the clearing house for our many thousand readers.

LIVE STOCK.

For Sale—Registered Holstein Bulls; 1 to 2 years old. Some sired by Prince Juliana, brother of former world's record heifer, Juliana De Kol. Dam and granddam, A. R. O. cows. Three record-breakers in some of their pedigrees. M. E. Sherman, Minnewawa Vineyard, Fresno, Calif.

"Andreas Hofer," imported, Saanen milch goat stud. Will pay fifty dollars for the best five months old kid of his get. Write for particulars. Bred does for sale. R. M. Cartwright, 1353 Palm St., San Luis Obispo, Cal.

Jersey Cows For Sale—Very cheap. One 8½ registered, one 13 years. Good but not regular breeders. $30 and $20, both for $45. Henry H. James, Fair Oaks, Sacramento Co., Cal.

Jersey Bull For Sale—Golden Lad Strain. Dam has authenticated butter record. G. B. Reeves, Mountain View, Cal.

Registered Shorthorn Bulls and Poland China Hogs for sale. Best breeding. P. H. Murphy, Perkins, Cal.

MISCELLANEOUS.

Learn Wireless and R. R. Telegraphy! Shortage of fully 10,000 operators on account of 8-hour law and extensive "wireless" developments. We operate under direct supervision of Telegraph Officials and positively place all students, when qualified. Write for catalogue. Nat'l Telegraph Inst., Cincinnati, Philadelphia, Memphis, Davenport, Ia., Columbia, S. C., Portland, Ore.

A Business Opportunity—Store building with glass front. Size of building 20x50, on lot 25x150, in the town of Palermo. Will sell at a bargain. This is a snap for some business man. For particulars address Box 43, Palermo, Butte Co., Cal.

A Bargain—To be disposed of at a sacrifice, well established grain, hay and feed business with a trade of $3000 a month. By right party trade can be doubled. Low rent. Ill health the cause of selling. Call or address A. B. Smith, Bodega Ave., Petaluma, Cal.

Raisins—Producer to consumer, new crop loose Muscatels in 50-lb. boxes, 2 crown, 4c; 3 crown, 4½c; 4 crown, 5c; seedless, 4c. guaranteed. A. H. Dugdale, Etiwanda, Cal.

For Sale—Female Scotch Collie pups; pedigreed stock. Descendants of Wellsbourne Conqueror and Anfield Model. A. C. Wisegarver, San Fernando, Cal.

DAIRY SUPPLIES.

Milk Coolers, Bottles, Caps, brushes. Buhl milk cans. Sharples separators. Babcock testers, veterinary instruments, wood soled boots and shoes, and our celebrated "Prosperity" washing powder. Guy F. Kelsey, 108 E. 8th St., Los Angeles, Cal.

WANTED.

Wanted—Your work pays the expense to learn a trade that pays $5 a day, in a few months' time; electricity, automobiles plumbing, bricklaying; actual contract jobs; 200 students last year. United Trade School Contracting Company, 647 Pacific Electric Bldg., Los Angeles, Cal.

Help Wanted—We want several good solicitors to solicit for a high class suburban monthly publication. Good profitable employment to the right party. For particulars address Box H, Cultivator Office, Los Angeles.

Wanted—Agents everywhere for the Perfection Hot Pan Lifter, 4 articles in one. 25c. Just out. Every woman wants one. Good commission. Geo. N. Bartlett, 402 Mason Bldg., 4th and Broadway, Los Angeles.

TREES.

If You Have No. 1 Deciduous Fruit Trees, berry vines, or citrus trees, true to name and first-class, we will buy for cash or exchange for No. 1 ornamental stock; have a surplus of Acacias, Pittisporums, Date Palms, Guavas, Camphors, Monterey Pines, Cedar Deodoras, Cornichon Grape Cuttings, Spineless Cactus (Mission). Good Columbus Surrey, fine 20th Century Carbide Gas plant. Get busy. Address H. L. Bauer & Son, 737 S. Spring St., Los Angeles.

Orange Seed Bed Trees—15,000 to 20,000 from 6 inches to 2 feet tall, for sale as they stand, or would let on shares in this vicinity, now or later. R. Toon, 1337 W. 24th St., Los Angeles, Cal.

Ornamental Eucalyptus—Cleanest and best shade trees for the ranch. Acacias, pines, etc. Large stock. Ballou's Nursery, 728 East Orange Grove Ave., Pasadena, Cal.

Write for Special Price on peach trees and French prune trees, on Myrobolan root. Gridley Colony Nursery, Gridley, Cal.

Marsh Seedless Grapefruit—600 large trees for sale. E. S. Thacher, Nordhoff, Cal.

For First-Class Valencia and Navel Orange trees and Eureka lemons, see A. G. Snow, Oxnard, Cal.

Fine Line of Navels—Valencias and Eureka lemons for delivery spring of 1911. Contract now and get the first choice. The King Citrus Nurseries, Whittier, Cal.

NURSERY STOCK.

Having bought our seed of Luther Burbank, who guaranteed it selected seed, mostly from Giant Crimson Winter Rhubarb, we feel in shape to offer choice Crimson Winter Rhubarb plants for this year's planting at reasonable figures. Write for particulars. B. B. Currier, Sea Bright, Cal.

Rivera Nursery, L. L. Bequette, Prop.—Wholesale and retail dealers in Northern and semi-tropical trees, shrubs, roses, green house plants, etc. Have good stock of apples, peaches, etc. Send for descriptive price list. 625 S. Breed St., Los Angeles, Cal.

Fifty Thousand Fine Calla Bulblets for planting, one fifty per thousand. Ten thousand for twelve fifty. Express prepaid. Send for sample. J. M. Beaman, 17 Kennan St., Santa Cruz, Cal.

Improved Superlative Red Raspberry Plants—Largest raspberry in cultivation. 100 plants, $5.00. Send for description. William Richard, 438 River St., Santa Cruz, Cal.

RARE PLANTS.

Wild Plant Improvement Gardens, Santa Ana, California. Newton B. Pierce, proprietor. Rare choice ornamentals and new fruits from all lands.

FARM LANDS FOR SALE.

Owens Valley Lands—Those who have written us regarding our lands, we wish to advise that the railroad is now completed and that the cost and time of going into the Valley is greatly reduced. Instead of an expense of $30.00, you can make the round trip, spending two days on our land and seeing the country thoroughly, for a total cost of $19.00, which will be refunded to you in the event you purchase. We urge upon the California farmer, who is considering a change of location, not to waste any time in investigating Owens Valley. The possibilities of this wondrous district are far beyond anything in California. It is not necessary for us to use bumper crops of one successful farmer to tell of the wonderful resources of this Valley. From 250 to 500 bushels of potatoes, from 60 to 90 bushels of corn is the general run. The choicest apple districts of Oregon, Washington or Colorado are not one bit superior to Owens Valley, where you can buy today the very best foothill apple land we have, with a perpetual water right, in steel and concrete mains, at $150 per acre, while the same land in the Northern States would cost you $600. There is no experiment about the Owens Valley as an apple country. The trees have been there for 40 years. Expert apple orchardists from the Rogue River, who examined the land in the Owens Valley this summer, contend that their former home never produced Wine Saps and Spitzenburgs equal to what they saw. The climate in Owens Valley is superior to anything in California, outside of the seashore. The hottest day in nine years was 102 deg. This last summer the thermometer ran to 100 deg. on two occasions. The winters get as low as 10 deg. above, but all farmers contend they work in their shirt sleeves all winter, the cold period only being in the early morning. You should write this office and let us send you an assortment of pictures, maps and complete descriptions. Our printed matter will give you a very complete story of all the conditions in the Valley. The man who lost his opportunity in buying Southern California lands when they were $150 an acre has the same opportunity awaiting him in Owens Valley. If you are in the city, do not fail to call at our office and see the exhibit of apples, corn, onions, potatoes and all grains, which you will acknowledge are superior to anything you believed California could raise. Owens Valley Improvement Co. James R. H. Wagner—H. S. Cook, Sales Agens, Room 13, 329 South Hill St., Los Angeles, Cal.

For Sale—By owner, good farm land, $40 to $75 per acre, in Merced County, 9 miles from Merced and ½ mile from station on S. P. and 4 miles from La Grande on Santa Fe. This land is a rich, sediment soil, situated, in the Artesian Belt and an abundance of water is thus assured. Is level and all under cultivation. No alkali, and is suitable for figs, corn, alfalfa, beans, and all farm crops. Will subdivide in lots from 40 to 800 acres. This land is very cheap at the price. In fact, it is only one-half the price of other land in same locality. For further particulars call or address Paxton, 612 Lankershim Bldg., Los Angeles. Phone A6340.

For Sale—The finest alfalfa ranch in Southern California, 12 miles from Riverside on railroad. Consists of 473 acres of which 378 acres are in a perfect stand of 3-year-old alfalfa. Not a foot of waste land. Two wells, producing 400 inches of water or double the amount required. Complete equipment including 16 head of live stock. This ranch is situated in the heart of one of the richest and most beautiful districts in Southern California. Ideal dairy proposition. Is immense income producer. Selling to settle an estate. For further particulars apply to R. C. Lewis with The Lawrence B. Burck Company, 142 S. Spring St., Los Angeles.

For Quick Sale—Twenty-two-acre orange grove, 11 in Valencias, 11 in Washington Navels and 3 acres in gardens, corrals, etc. 9-room house, 7 miles from Los Angeles on interurban car line. Pays 15 to 20 per cent on investment of $46,000. Trees 20 years old, in perfect condition. Largest crop ever produced now on trees. 50 per cent of Florida crop ruined, making high prices a certainty. $25,000 cash, balance on terms. Rare opportunity to buy a perfect grove. It adjoins one of the prettiest and most thriving foot hill towns, grand mountain view. For particulars apply to R. C. Lewis, with Lawrence B. Burck Company, 142 S. Spring St., Los Angeles.

For Sale—A 20-acre farm for $20 cash and $20 a month; possession now; $90 to $125 per acre; your crops pay for the land. Rich, level land for alfalfa, oranges, almonds, grapes, cows, chickens; abundance of ditch water, for irrigation, for $1 an acre a year. Where else can you get this? In Oakdale Colony, near good town and railroad station, climate delightful. T. Wiesendanger, 207 S. Broadway, Los Angeles, Cal.

For Sale—815 acres in San Luis Obispo County. A typical dairy ranch. Plenty of wood, water, irrigable land, buildings, fenced and cross fenced. Orchards, vineyards, oranges, lemons and walnuts do exceedingly well here. Forty acres of land suitable for these. Price $21 per acre. For further particulars apply to Mrs. F. A. Clink, Pozo, Cal.

For Sale—5-acre chicken ranch, ¼ mile from Petaluma, 5-room house, brooder house, windmill and tank, all new. Fine well of water, also fine view of surrounding country. Cow, horse, wagon, and 900 laying hens go with place. Net income last year over $1,000. Price $4,500, if taken before the first of January. Call or address A. B. Smith, Bodega Ave., Petaluma, Cal.

Irrigated Land—The famous Gridley Colonies. Improved lands, best homeseekers' proposition in California. Write for particulars. Gridley Land Co., Gridley, Cal.

84 Acres, Highly Improved—15 acres bearing orchard; good improvements, stock, tools, furniture, etc. A bargain at $3,250. Particulars, address W. T. Moore, Cottonwood, Shasta County, Cal.

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For Sale—80 acres, rich land with heavy stand of alfalfa, 3½ miles from railroad and growing town, money making dairies adjoining. In natural gas and artesian belt. An excellent opportunity for dairy, hog raising, chickens and turkeys. If necessary, local bank or creamery will furnish money for cows to put onto this piece. Price of $135 per acre includes interest in 4 flowing artesian wells, furnishing plenty of water for irrigation. Terms, one-third cash, balance term of years at 6 per cent. Address S. W. McKee, 2120 West 31st St., Los Angeles. Home phone 71248.

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The way I am booking orders proves there will be something in Buff Wyandottes soon. Fall in line. Book your orders for future delivery while you can get eggs at reduced prices. Big, blocky and buff, the "Classiest" bird in America and best winter layers, $1.50 for 15. Kellerstrass Crystal White Orpingtons, $3.00 for 15. No more at these prices after November. Frank Haasis, Ontario, Cal.

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For Sale—Thoroughbred Bronze Turkeys from 38 to 40 lb. Toms, and 15 and 20 lb. Hens. Young Toms $5.00 to $7.00, young hens, $3.50 to $4.00. Pairs and trios not related. Mrs. P. E. Tucker, Tulare, Cal., R. D. 1.

MACHINERY

For Sale—Second-hand windmills, tanks, engines, farm machinery that will do same work as new at half price. Complete saw mill, including stickers, circular and band saws, blower, planers, 80 H. P. steam outfit. 1400 ft. 2½-inch standard, 1400 ft. 1½-inch standard, very cheap. Small distillate tanks, 50 gallons up. Domestic and irrigating tanks, galvanized and redwood, 500 to 10,000 gallons, also 50,000 gallon redwood tank, fine for storage or irrigating. Steam engines with steam pumps; gasoline engines, 2 H. P. Fairbanks engine, geared pump jack, pipe, pump complete $90 F. O. B., also many other sizes. Special 20-day bargain; 12 H. P. Fairbanks engine, No. 2 deep well Ames double acting pump jack, 65 ft. casing, rods, and double acting cylinder, 50 ft. belt, all complete and now pumping 20 inches water from 65 ft. well into large reservoir 110 ft. on top of hill. Our price $380 on cars if taken before we have to move it. Complete mounted wood sawing outfit. Gang, disc, road, riding, walking plows, cultivator, feed rack, bone grinder, Fresno, wheel and slip scrapers, wagons, surrey, grading tools, sundries. Demmitt Co., up stairs, 120 N. Main, Los Angeles.

For Sale—21 H. P. gas engine. We got this at a price that enables us to sell cheap. Has been put in A-1 condition. Our guarantee goes with it. Baillie & Brandt Co., 943-945 N. Main St., Los Angeles.

For Sale—We have a 14 H. P. White & Middleton gas engine in perfect order. If you want a bargain, see us about it right away. Machinery Exchange, Main & Bruno Sts., Los Angeles.

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Big Income Producer—Owner wishes to retire—51 acres. 14 acres thrifty olive trees interset with prunes; 12 acres extra prunes; 12 acres apricots; 6 acres peaches; family orchard, consisting of almonds, walnuts, figs, etc.; 6 acres in alfalfa and drying grounds.

Olive oil plant, sulphur house, with track and cars. Gasoline pumping plant. Can irrigate also from creek. Expect $10,000 crop of olives next fall. 2 horses, 12 cows, and considerable stock of hogs.

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Wanted—Position as ranch foreman. 10 years' experience, grain, alfalfa, and oranges. Sober, industrious, high school education. References. Address Box M, Cultivator.

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CHEERFUL HOMES.

A cheerful, happy home is the greatest safeguard against temptations for the young. Parents should spare no pains to make home a cheerful spot, says New York "Weekly." There should be pictures to adorn the walls, flowers to cultivate the finer susceptibilities, the choicest and most entertaining of books, and instructive newspapers and magazines. These things, no doubt, cost money, but not a tithe the amount that one of the lesser vices even will cost—vices which are to be acquired away from home, but so seldom there. Then there should be social pleasures—a gathering of young and old around the fireside, a warm welcome of the neighbor who drops in to pass a pleasant hour. There should be music, games, and reading. The tastes of all should be consuled, until each member of the family looks forward to the hour of reunion around the hearth as the brightest one in the twenty-four.—Green's Fruit Grower.

Household Department

A WOMAN'S QUESTION.

Do you know you have asked for the costliest thing
Ever made by the Hand above—
A woman's heart and a woman's life,
And a woman's wonderful love?

Do you know you have asked for this priceless thing
As a child might ask for a toy,
Demanding what others have died to win,
With the reckless dash of a boy?

You have written my lesson of duty out,
Man-like you have questioned me—
Now stand at the bar of my woman's soul
Until I shall question thee.

You require your mutton shall always be hot,
Your socks and your shirts shall be whole;
I require your heart to be true as God's stars
And pure as heaven your soul.

You require a cook for your mutton and beef;
I require a far better thing;
A seamstress you're wanting for stockings and shirts—
I look for a man and a king.

A king for a beautiful realm called home,
And a man that the Maker, God,
Shall look upon as he did the first,
And say, "It is very good."

I am fair and young, but the rose will fade
From my soft, young cheek one day—
Will you love me then, 'mid the falling leaves,
As you did 'mid the bloom of May?

Is your heart an ocean so strong and and deep
I may launch my all on its tide?
A loving woman finds heaven or hell
On the day she is made a bride.

I require all things that are grand and true.
All things that a man should be;
If you give this all, I would stake my life
To be all you demand of me.

If you cannot do this—a laundress and cook
You can hire, with little to pay;
But a woman's heart and a woman's life
Are not to be won that way.
—Lena Lathrop, in Kansas City Star.

IMMORTAL ROSES.

If there was a sufficient sadness about the gaunt old house whose broad railed gallery echoed only the limp steps of the negro Sam, there was a greater pathos in the garden, for here not even a slow footfall invaded the solitude.

Everything about the place breathed neglect—everything, from Sam's shredding shirt to the headless weathercock on the cupola.

But the roses, trailing unchecked over the crumbling walls, seemed to cry it, for in times past were they not the pride of the Runnel garden, bedded, pruned and sprayed, then the choicest blooms gathered each day and carried to the latticed door of the red cottage over the way and presented, with Master George's compliments, to Miss Barbara?

But not so now. No, not since the day that Miss Barbara had bidden her mammy Chloe tell Sam to take the roses back to his master, and to say that he had better send them to Nancy Pierce, since he seemed to care so much for her.

The roses went back to his big house, but not to Miss Nancy. Sam set them in his master's room and tried to tell him gently. But when Sam picked up the bits of the crystal vase he sighed deeply, "Things will be different, I reckon."

Sam was right. Next morning the first post rider brought the news that Miss Nancy and Master George had gone to Beverly; were married.

So things were different, indeed. Although Mistress Runnel came to live at the big house and often walked in the garden, she never, after the first day, looked at the roses, for her young husband had said that he detested roses, and would have Sam dig them up in the spring.

He said the last words in a low voice and when his bride was not looking set his heel on the bud which she had dropped, and looked hard toward the tight-closed shutters of the deserted cottage across the way.

Sam did not dig up the roses. Master George told him to, but before the next spring Mistress Runnel went away. There was something about a Confederate officer; then she died in Paris. Master Runnel went to sea and left Sam all alone in the big house.

One day in June long after that, when the great fluff heads of the roses were drooping pensively under the glare of the sun, a firm tread accompanied by a tap-tap sounded on the flag walk that led from the gate to the garden.

Sam heard them from the arbor house, where he had been dosing fitfully. The steps and the tapping paused now and then as if their owner were standing still here and there; then they started, went straight up to the rose bed and stopped short.

It was a trembling hand that slowly raised a bud to a face framed in gray hair.

When the plushed petals touched the lips of Master George, somewhere a bird called to its mate and the summer wind sighed far away like an echoing sorrow.

The next day and for several days after a great gray veil hung over the sun so that Master George's visits to the garden became one prolonged communion. He had Sam bring a settee from the gallery and one day he picked a beautiful winsome bud and laid it on his knee beside the unopened paper, while he looked and looked—not at the red cottage, with its fast-closed shutters. From the first he had turned his defiant back to the lonely house.

The stillness about the place haunted him. Miss Barbara had gone long ago, on the night after his return from Beverly, and now the Virginia creeper climbed the casement as if shielding its mistress' home from the gazing world, while the shrub and berry vine tangled caressingly over the paths which she had trod.

Word of Miss Barbara's triumphs and adulations had reached the garden, but by that time its master was upon the high seas and the remnant of town folk only shook its head sagely. When in after years it was rumored that she had a world of

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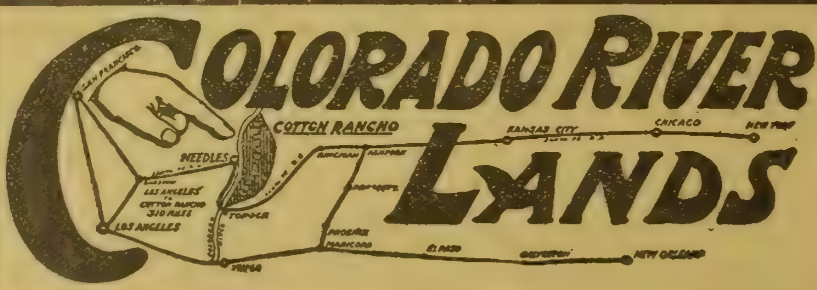

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suitors at her feet, but none was accepted, its aging head nodded significantly.

June melted into autumn and the mist continued to lift and lower over the blazing sun and Master George continued to sit in the garden while the roses swayed and smiled companionably.

Sam had captured the truant branches and culled the ghostly stalks that had long threatened the tender shoots, and now each flower seemed to bloom for the master's praise and touch, each seemed to rival the other in recalling a time long gone.

Into that long-gone time Master George had entered, all unwitting. It was the roses—they had brought lights of tenderness back into his eyes; helped him to forget the broken vase; the mad ride to Beverly and the bitter aftermath.

Now in their midst he was strolling with Barbara. These paths echoed her songs; Barbara in white musline, buoyant and happy; Barbara, with a rose in her hair.

One morning Master George tarried long beside the roses. His face was drawn and ashen, for when he had reached for a tempting bud near the wall his eye caught the white of a curtain that fluttered out of the casement of the red cottage.

Barbara's cottage! He looked intently, misbelieving the wondering eyes. Yet there beside the open window sat Mammy Chloe, red-coifed and sad.

Master George opened his book, but that could not hide the stooping figure of the old colored woman; he started to read aloud, but that could not drown the crooning of her mournful song.

Then the eyes in the garden suddenly dimmed and Master George leaned hard upon his cane as he went toward home.

In his room he sought from the folds of his wallet a rose long withered. Sam found him in the twilight with the flower crushed in his hand.

He went early to the garden next morning, but when he reached the settee Mammy Chloe was gone from her place by the window; the shutters were closed and the cottage had resumed its former aspect of pathetic silence.

He walked the path, stopping now and then to peer through the hedge. "It is early," he argued; "she is resting; she has come a long way." But the sun said noon and after and still the blinds were drawn.

Twilight came, and with it a feeble light streaked through the slanting bars. Master George still sat in the garden. A book lay unread beside him and his head was low bent.

"Barbara!" his lips moved. Could it be that Mammy Chloe had returned to the cottage—alone?

Young men and girls strolled past the iron gate in the leafy distance; he could hear snatches of their gay chatter, and now and then some plaintive chords on a guitar down the street.

The gate hasp lifted, dropped. Somebody was treading the long-disused path. He did not heed nor hear, for back through a vista of exile life again stretched in unending years—years weighted with the wrongdoing of that fitful night—years now bitter, now lonely.

Tears lay in his eyes as he watched the flickering candle light in the cottage window and thought of the garden days just ended. Days so full of thought—days wherein he had grown to know that it was love that had led him home—home to wait for Barbara—but now! O God! Had she gone on to that land of eternal roses? His heart stilled in answer.

Not till the ambling figure stopped near the rosebed did he know. He started, trembling with uncertainty, then with outstretched hands rushed to meet her.

"Tell me—has Barbara—? Where is she?" he could say no more.

The red-coifed head bowed low and in the darkness she pointed in mute appeal to the cottage window.

"She's there, Mars George, most sick an' wearin' her heart out for roses—jes' roses."—Spokesman Review.

TABLE LINEN.

Every woman rejoices in her linens. From the earliest time this was considered the most important part of a girl's dowry and now it is one of the first things purchased for the green box. At present the annual linen and white goods sales are going on and if one can tell a good piece of linen when one sees it, there is an opportunity to get it at a very low price.

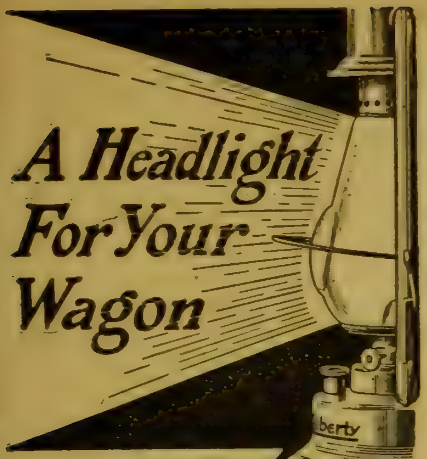
The cheaper qualities of table linen, or those woven on an ordinary loom, are termed "table linens," while the more expensive linens appear in many different designs and are termed "damasks." Table linen may be bleached or unbleached and can be had in simple designs. Either will be found to wear better than the cheaper damasks and will launder more satisfactorily. There is very little trouble in bleaching; all that is needed is air free from smoke, plenty of sunshine and green grass. Do not use bleaching materials as most of them injure the fabric.

The Irish linens have always been prized most highly, although there are linens of German, French and American manufacture. Each has its distinguishing characteristics. To obtain linen of good wearing quality choose that which is pliable and yielding and is without sizing. Never buy a mixture of cotton and linen; either all cotton or all linen is more satisfactory than a mixture of the two. Never buy fringed table linens, it is very difficult, if not impossible, to keep them in order. The fringe either tears off or becomes matted and very unsightly. A pattern cloth is always prettier than one bought by the yard, on the other hand it is also more expensive. Avoid a pattern which has an openwork effect as it will not wear well.

All linens should be hemmed by hand. In laundering avoid rubbing them on the board and use no starch unless they are of a very fine quality, and then do not use enough to give a starchy stiffness. A silence cloth used under the linen adds to the length of time it can be used without looking soiled. It also relieves the cloth from friction at the edge of the table.

Great care should be taken in drying linen. If it is put on the line and left to flap in the wind it will soon wear out.—Farmers' Tribune.

Mary had a little skirt
Tied tightly in a bow,
And everywhere that Mary went
She simply couldn't go.
—Harper's Bazar.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APPLE RECIPES.

Apple Custard.

Pare and slice Watsonville apples to nearly fill a buttered baking pan. Add bits of butter, sugar and flavoring to taste and bake until tender. Have ready boiled custard flavored to taste, with beaten whites of eggs folded in; when cool pour over apples and brown in oven. Serve hot or cold with cream.—M. M.

Apple Marshmallows.

One-half box Knox's gelatine, 2 cups granulated sugar, 3 large Watsonville apples, pared and put through the food-chopper. 1 doz. walnuts chopped in the same manner. A few grains of salt. Soak gelatine in ½ cup cold water. Heat sugar in ½ cup water and to this syrup add the gelatine, letting it stand until partially cooled. Add the salt, nuts and apples. Beat with a whip, and when it becomes too stiff for the whip use a spoon, until it can be spread in pans previously well dusted with confectioners' sugar. Stand it in a cool place until thoroughly chilled; turn out, cut in cubes and roll in confectioners' sugar.—E. P. D.

Apple Meringue.

To hot sauce made from 6 large Watsonville apples add butter size of an egg. When cold add 1 cup fine cracker crumbs, well beaten yolks of 3 eggs, 1 cup sweet milk or cream, salt, sugar and nutmeg to taste. Bake in large plate with rich under crust. When done make a meringue of 3 eggs, ½ cup white sugar and a few drops essence of lemon. Pour over the dish and brown lightly.—J. R.

Apple en Casserole.

Peel and slice Watsonville apples into a large casserole. Add sugar to taste and moisten with cider or water. Cover the casserole and bake several hours until the quantity is reduced by one-half. When cold serve with cream.—C. S. G.

Bellflower Custard.

Two cups well sweetened apple sauce, 1 saltspoon nutmeg or cinnamon, ½ cup seeded raisins boiled for 10 minutes. Yolks of 2 eggs. Mix well and bake with one crust for 15 minutes. Make a meringue of the whites of 2 eggs slightly sweetened, spread over the fruit and brown in oven. Serve cold.—V. R.

Apple Compote.

Peel and quarter any solid apples, such as the Watsonville Newtown, and note the weight of the prepared fruit. Boil in water without sugar until almost tender. Add almost an equal weight of sugar and some lemon juice, and boil quickly until the apples are clear. Remove the fruit and reduce the juice to any desired thickness before pouring it over the apples.—M. E.

Apple Butter.

One quart new cider boiled to one-half the amount, 2 qts. sweet apple sauce. Boil together stirring constantly until dark brown and of a consistency like marmalade. A few minutes before it is done add 1 qt. molasses and flavor with cinnamon and nutmeg.—V. R.

Apple Brown Betty.

Sliced Watsonville apples, 2 cups bread crumbs, 1½ cups sugar, grated rind of 1 lemon and some butter.

Mix together crumbs, sugar and peel. Sprinkle a layer of this in buttered baking dish and dot with bits of butter. Alternate these layers with layers of the sliced apples, making the top layer of crumbs and more butter. Bake in slow oven until jelly-like and clear. Cover while baking as it burns easily. Serve with cream. —A. W.

Surprise Apple Salad.

Use eggs not too freshly laid. Put into cold water and let them cook ten minutes after the water boils. While the egg is still warm remove carefully from the shell and by pressing the ends between the thumb and first finger give it the shape of an apple. Dip it into a yellow liquid made by mixing with water a few drops of Burnett's yellow paste. Then with Burnett's "Fruit red" paste, paint a rosy cheek on one side of the apple. In the smaller or blossom end of the apple insert a clove from which the center has been removed, and in the larger end insert an apple stem. Arrange on crisp lettuce leaves and serve with mayonnaise or French dressing.—G. L. B.

Apple and Celery Salad.

Scoop out the centers of 10 ripe apples. Mix with the chopped apple and an equal quantity of chopped celery with a boiled dressing. Fill and serve on crisp lettuce leaves or curled celery.—L. A. T.

SOME EXCELLENT HOME REMEDIES.

If more young mothers would fortify themselves with good home remedies there would be a great saving of doctors' bills and also of suffering and many of the best remedies we have are easily prepared at home and at almost no expense. A good way to ward off an attack of croup is to put a tablespoonful of alum in a cup, pour boiling water over it and stir until all is dissolved, then add plenty of sugar or honey, and give a teaspoonful of this mixture every hour or half hour as the case requires. For sore throat, moisten a flannel cloth with coal oil and bind around the throat, and if very bad use the oil as a gargle. If there is roughness in the throat or hoarseness, beat the white of an egg to a stiff froth, into this squeeze the juice of a lemon and stir in as much sugar as it will dissolve and take a teaspoonful four or five times a day. For a chronic sore, bathe three times daily with weak suds made of the best castile soap and ten drops of carbolic acid in a basin of warm, soft water, and afterwards apply vaseline. The best way to treat severe bruises where the skin is broken is to bathe them with as hot water as can be borne and dry well with a soft cloth, then dust well with talcum powder, as it is safe to use and it is very healing and soothing to the skin. A case of breaking out on the skin with intolerable itching was greatly relieved and finally cured by rubbing with olive oil and wiping off as much of the grease as possible and then dusting well with this powder, and there is no better powder than this to use for chafing or any kind of breaking out on young children. To cure hiccough give a few drops of essence of peppermint on sugar, and for nausea and headache give a few drops of the peppermint in a little warm water. This will often give immediate relief. It is well to keep on hand a mixture of a tablespoonful each of lard and turpentine, and for a cold in the chest, rub over the lungs and between the shoulders with the mixture and cover with flannel.—Martha.

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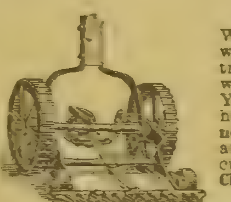

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San Francisco and Los Angeles Produce Markets

Los Angeles Markets

LOS ANGELES, Nov. 9, 1910.

Butter.

Butter is not in as heavy receipt but price still stands at former quotations. Market firmer.

Price to trade 2½c in advance of the following Produce Exchange Quotations:

Extras	.35
Firsts	.32½
Cooking	.26

Cheese.

Local	.18
Northern, fresh	.18@18½
Oregon Daisy	.18½@19
Imported Swiss	.32
Domestic Swiss	.22@24

Eggs and Poultry.

Eggs in keen demand with a firmer market. Quotations exactly as last week.

Paying price f. o. b.. L. A. is:

Local ranch candled	.49
Case count buying price	.45
Eastern fresh	.36
Eastern Storage	.32
Seconds	.27

Dealers pay for live poultry f. o. b. L. A.:

Hens, per lb	.17@20
Roosters	.8@10
Spring	.20@23
Turkeys	.23½@28
Ducks	.16@17½
Geese	.11
Squabs per doz.	1.50

Live Stock.

The following quotations are f. o. b. Los Angeles, on all stock:

Hogs, 175 to 200 lbs.	9.25
Prime Steers	.5
Heifers	4@4½
Calves, per lb	.6½
Sheep, ewes, per head, shorn	5.00
Lambs, per head	3.75@4.25
Wethers, shorn	5.00

Potatoes.

Wholesale prices are:

Highlands	1.25@1.45
Salinas	1.75
Sweets, Yellow, per ctl.	1.40@1.60

Onions.

Wholesale quotations:

Australian Browns	1.50@1.75
Yellow Danvers	1.50@1.75
Garlic	7@9

Vegetables.

Wholesale quotations:

Artichokes, northern, doz.	.90
Beets, sack	.90
Beans, Lima	.4@5
Beans green	.4@6
Brussels Sprouts	.8@10
Bell Peppers, lb	.5@6
Green Chilis	.5@6
Cucumbers, per lug	.50@60
Cabbage, per sack	.65@75
Celery, crate	2.25
Cauliflower crate	1.75
Carrots, per sack	.90
Egg Plant, per lb	.4@6
Green Onions, per doz bunches	.20
Leeks, per doz	.40
Lettuce, common, per crate	1.00@1.25
Okra, lb	.5
Peas, per lb	.4@6
Parsley, per doz bunches	.20
Parsnips, doz. bunches	.25
Pumpkins lb.	1@2
Radishes, per doz. bunches	15@20
Rhubarb, local	.75@85
Rhubarb, northern	1.75
Spearmint doz bunches	.30@35
Spinach per doz	.20
Hubbard Squash, lb	1½@2
Summer Squash	.40@50
Tomatoes, lug	.50@75
Turnips, sack	.90
Water Cress, doz. bunches	.25@35

Ctrus Fruits.

Valencias	4.00
Navels	2.75@3.00
Grapefruit	2.25@3.75
Lemons	4.50@5.00

Fresh Fruits.

Wholesale prices on the market are:

Alligator Pears	4.00@4.50
Apples Bellflower	.90@1.10
Spitzenbergs	1.50
Jonathans, Cal	1.35@1.65
Greenings	1.00
Pearmains	1.00@1.25
Pippins	1.10@1.25
Pineapples	6@7
Casabas, crate	1.50
Figs, box	1.00
Grapes lug	1.00@1.50
Tokays	1.00@1.10
Mangoes, lb	10@15
Guavas, basket	.5
Pears, lb	.5@7
Bartletts	3.00
Strawberries	.10
Blackberries	.10
Peaches, Clings, box	1.00
Plums, crate	1.50
Quinces, lug	1.00
Watermelons, lb	1½@2
Christmas Melons	2.00@2.25

Dried Fruits.

Wholesale prices are:

Apricots	12@13
Evap. apples, fy. per lb	8½@9
Figs, pound bricks, box 100	85@2.00
Peaches	7@8½
Nectarines	.10
Pears	10@11
Prunes	6½@10½
Plums	10@11

Beans Dried.

Wholesale quotations:

Limas	5.00@5.25
Black eyes	5.00
Pinks	5.50@5.75
Lady Washington	4.50
Small white	4.50
Garvanzas	4.50
Lentils	7.00

Nuts.

Wholesale quotations are:

No. 1 soft shell walnuts	16½@18½
No. 1 H S	.14
No. 2, all kinds	.11
Grafted or budded an advance of 2½c.	
Brazil nuts	.14
Filberts	.14
Almonds, IXL, per lb, new	16@17
Pecans, polished	15@16
Peanuts, Eastern	7@7½
Peanuts, Cal	.6

Honey.

Wholesale quotations:

Extracted water white	.9
Extracted light amber	.8½
Comb W. W.	.18
Light amber	.15
Beeswax	.25@30

Hay.

Buying prices f. o. b. cars L. A. are:

Barley hay	10.00@13.00
Wheat hay	10.00@13.00
Tame oat	12.50@14.00
Alfalfa	10.00@11.00

Grain.

Wholesale selling price, f. o. b. Los Angeles:

Wheat, new per ctl	1.75@1.80
Corn	1.60
Popcorn	3.50@4.00
Kaffir corn	1.75
Egyptian corn	1.75
White oats	1.80
Rye	2.00
Seed Barley	1.20

Feed Stuff

Wholesale selling price f. o. b., Los Angeles:

Cracked Corn	1.65
Cracked Wheat	1.90
Shorts	1.80
Bran	1.55
Oil Cake Meal	2.50
Feed Meal	1.70
Rolled Barley	1.15

San Francisco Markets

SAN FRANCISCO, Nov. 8, 1910.

Butter.

Butter advanced a half cent on extras Monday, all other grades remain at last week's quotations. Market firm.

The official quotations of the San Francisco Wholesale Dairy Produce Exchange for today are as follows:

California extras, per lb	.33½
California firsts	.30
California seconds	.29
Storage	.30½

Cheese.

California flats, new	13@16½
Cal. Young Amer. fy. new	15½@16½
Oregon, Fancy	.16½

Eggs and Poultry.

Eggs have taken a great advance and are now quoted at 56 for extras with holders demanding 57 and market very firm at that.

Official quotations of the S. F. Wholesale Dairy and Produce Ex. are:

Fresh ranch extras	.56
Firsts	.51
Seconds	.30
Storage	.30½

Hens, per dozen	4.50@10.00
Roosters, per doz	5.00@7.00
Fryers, per doz	5.00@5.50
Ducks	6.00@10.00
Broilers	3.00@4.00
Spring Turkeys	.23@26
Geese	2.00@3.00
Goslings, pr	$2.50@3.00
Pigeons	1.50@2.25
Squabs	2.50@3.00

Live Stock.

San Francisco prices gross weight:

Steers	.4@5½
Cows and heifers	3¼@4½
Hogs	.6@9½
Calves, per lb.	4½@6
Milk Lambs, Unshorn	6@6¼
Wethers No. 1	.4½
Ewes No. 1	.4@4¼

Potatoes.

Wholesale market quotations:

River White, new box	.85@1.25
Salinas Burbanks	1.60@1.75
Oregon Burbanks	1.40@1.50
Nevada	1.25@1.35
Sweets, ctl	1.90@2.00

Vegetables.

Wholesale quotations:

Artichokes	.25@40
Beans, string per lb	.5@7
Beans, Lima, lb	.5@6
Beans, wax	.4@5
Cucumbers, box	.40@60
Celery, per doz	.25@40
Chili Peppers, per box	.35@50
Bell Peppers	.6@7
Green Corn, sk	.75@1.25
Egg Plant, box	.40@60
Lettuce, per crate	4.50@5.00
Okra, box	.50@65
Peas per lb	.5@6
Summer Squash, box 25 lbs.	1.00@1.50
Rhubarb, box	1.00@1.25
Tomatoes	.25@60
Garlic	.3@3½

Onions.

Onions sk, Cal	.90@1.00

Ctrus Fruits.

Navels, new	1.75@2.75
Valencias	3.00@4.00
Grapefruit	2.50@3.50
Lemons	2.50@6.50
Limes	5.50@6.00
Tangerines	1.50

Fresh Fruits.

Apples box	.35@1.00
Apples, Bellflowers	.60@90
Bananas, Hawaiian	.75@1.75
Cranberries, Coos Bay	2.00@2.50
Cantaloupes	2.00@2.50
Nutmegs	.50@1.00
Figs, box, single	1.00@1.25
Grapes Tokays	.50@85
Huckleberries, lb	.7@11
Pears	.50@1.00
Winter Nelis	1.50@2.00
Persimmons, box	.50@90
Quinces, box	.65@1.00
Pomegranates box	.50@1.25
Raspberries, chst	4.00@7.00
Strawberries, chst	3.50@6.00
Pineapples, doz.	2.00@3.00
Watermelons, per doz.	1.50@3.00

Dried Fruits.

Market is quiet and general tone not at all strong.

1910 crop, f. o. b., carload lots, per lb: Apples, 7@8¼c; Apricots, 10½@13c; do Moorparks, 14c; Peaches, 5¼@7c, with a premium of ⅛@¼c on Muirs; Prunes, Santa Claras, 5½c with ½@¾c premium on 40s; outsides 5¼@5⅜c; Figs, 4¾@6½c for White and 4¼@4½ for Black; Pears, 9¾@13c.

RAISINS—1910 crop: London Layers, in 20-lb. bxs: 6-crown clusters, $2.25@2.50; do, 5-crown, $1.75@2.00; do 4-crown, 1.40@1.50; 3-crown lawers, $1.25@1.30; do, 2-crown, $1.15@1.20. Seeded, per pkg.—Fancy, No. 16 5¾ 6c; Choice, No. 16, 5¼@5½. Loose Muscatels in 50-lb. bxs—Standard, 4-crown, 5½; do 3-crown, 4½@4¾c; do 2-crown, 4@4¼c. Dried Grapes, 3c. Seedless—Muscatels, 3½c; Sultanas, 4½c; Thompsons, 5c.

Nuts.

Walnuts, No. 1 soft shell	16@16½
Walnuts, No. 1 hard shell	.14½
Almonds, '10 N P U	.13@14
Almonds, '10 Nonp.	15½@16
Almonds, '10 I X L	.14@15
Almonds, Peerless	.12
Pecans	.14@17
Chestnuts	.8@12½

Beans Dried.

Limas	4.50@4.75
Pink	4.35@4.60
Black eyes	5.00@5.50
Small White	3.50@3.70
Large White	3.25@3.65
Kidneys	5.25@5.50
Garvanzas	2.75@3.00
Bayo	4.40@4.75
Horse beans	2.00
Red Mexicans	5.00@5.50
Cranberry	4.25@4.50

Hops

Hops, 1910 crop	12½@17½

Honey.

W. W. Comb '10	.15@16
Dark Comb	.10@12½
Extracted W. W.	.9@9½
Extracted dark	.5¾@6½
Beeswax, per lb	.24@30

Hay.

Receipts of hay for the week have been 4500 tons. The arrivals of hay during the entire month of October amounted to 20,000 tons, as against 12,500 tons that came into San Francisco during the month of October last year, when hay was comparatively high.

The increase in these hay arrivals this year during October is easily accounted for by the fact that large quantities of alfalfa have been brought in for shipments to the north, and large quantities of other feed hay that were being used here to fill orders for shipments along the Coast and for export.

The hay now coming in from the warehouses cannot be sold here, in most cases at prices sufficient to cover the cost of the hay with the warehousing charges added, and therefore purchasing in the country for the present is very limited.

Fancy wheat hay for retailing purposes, is readily sold at our top quotations; the same may be said for fancy tame oat hay but all the other types of hay are slow to move, and the poorer classes are very much neglected.

The market on alfalfa hay is unchanged, although a trifle quiet.

We quote the wholesale prices in round lots on today's market as follows viz.:

Fancy wheat	12.50@13.50
No. 1 wheat or wh and o	10.50@11.50
No. 2 wheat or wh and o	9.00@10.00
Choice tame oat	10.50@11.5[illegible]
Other tame oat	8.00@9.50
Wild oat	8.00@9.00
Stock hay	5.50@6.50
Alfalfa	9.00@12.[illegible]
Straw	.40@50

Grain.

Wheat, No. 1	1.41¼@1.43¾
Barley, good to choice	.95@97½
Barley, fancy	.98¾@1.00
Barley, poor to fair	.90@93¾
Oats, white	1.45@1.5
Rye, new crop	1.52½@1.65
Alfalfa seed	.18@19
Mustard brown	.4½
Millet	.2¾
Flaxseed	.5@5½
Broom corn seed, per ton	23.50

Feed Stuff.

Bran, per ton	28.00@31.00
Feed cornmeal, per ton	34.50@37.00
Cracked corn	35.00@37.00
Ground barley, per ton	21.50@23.00
Rolled oats, per ton	29.00@31.00
Middlings	32.00@36.00
Oil cake, per ton	40.00@41.50
Cocoanut cake, per ton	25.00@26.50
Mixed feed, per ton	24.00@27.00
Shorts	30.00@32.00

Deciduous Market

SACRAMENTO, November 5th. 1910.

The following circular of the California Fruit Distributors gives number of cars of deciduous fruit shipped from all points in California for the week (7 days) ending Friday morning November 4th, 1910:

Pears: One car.

No pear shipments have been made since October 29th and the movement has now ceased.

Grapes: 170 cars.

Reference to the report of last week will show that there has been a falling off of more than 120 cars during the past seven days. Grape movement is nearly at an end. Very few Tokays are offering and the Emperor is practically the only variety going forward in quantity. Movement will continue through the coming week but in a more limited volume and it is expected that the crop will be entirely cleaned up within the next ten days and possibly earlier.

Weather has remained favorable and while conditions are now somewhat threatening, it is hoped that there will be nothing to interfere with the successful close of the season.

ALMONDS MOVING.

Manager Dargitz, of the California Almond Growers' Association, reports:

The lull in the demand between Thanksgiving and Christmas has, evidently, passed. The Christmas demand is setting in and cars are moving nicely again. We have at present, as far as we can determine, not to exceed 40 cars unsold and the amount is whittling down so that we have every reason for encouragement in the matter of prices holding up. We think that when the trade learns that any variety is nearly exhausted it will hurry up with orders to meet its requirements. We have reached a point where we have to figure on placing orders for shipping out cars at such points as we can get the varieties needed. We are endeavoring to hold an assortment at each place so that we will have to do as little localling to fill up cars toward the end of the shipping season as possible.

We have met with some delay on the shelling end of the proposition but the cash for the shelled goods has been forthcoming promptly as fast as we could deliver.

We meet with vexatious delays

sometimes with the railroads and steamships, which we are not accountable for and can hardly correct, but we are doing the best we can and at all times safeguarding the interests of the growers.

We are now about to enter upon what we believe will be the last month of selling for this season when we expect to clean up our holdings.

Citrus Market

LOS ANGELES, Nov. 9, 1910.

The large receipts of Navels, Porto Ricos and Floridas is affecting the price of the few Valencias remaining in market. They still sell at fair prices and far above Navels, but not at as good prices as formerly. Shipping of Valencias is practically ended, but some are in transit and in various eastern market centers. Navels are being well received, though windfalls and early shipments from Florida are affecting the market somewhat.

Lemons are not so strong, though the market is not discouraging except in comparison with the exceptional prices of a few weeks ago. The auctions are still showing $6.00 and $7.00 sales, therefore lemon growers have no complaint.

Shipments.

Shipments to date this season since the beginning of the New Year, November 1: Oranges, 29 cars and of lemons 79 cars or a total of 108 cars of citrus fruit. To same date last season 88 cars oranges, 47 lemons, or a total of 136 cars.

Yearly Shipments.

Total shipments of citrus fruit for year November 1, 1909, to November 1, 1910, from the entire state aggregated 32,672 cars. Of these 2555 cars were from Central and Northern California. The total for Southern California was 30,117, of which 25,329 were oranges and 4788 were lemons.

The preceding year the total from the state was 40,592 cars, of which 2501 were north of Tehachapi and 38,091 from Southern California. These were divided between oranges and lemons respectively 31,895 and 6196.

The year before that, 1907-1908, the total was about the same as this year, being 32,647,.3150 being from the north and central parts of the state and 29,497, or 24,538 oranges and 4959 lemons, from the south.

NEW YORK Monday, Nov. 7.—Five cars of Valencias and one car of mixed were sold. The lemons in the mixed car met with good demand and, although coming into competition with some of the new crop foreign lemons, realized very good prices. Fancy fruit averaged $6.41 and $6.19, with choice $4.60. The lemons could not be rated as first-class.

The opening sale of Valencias developed a slightly better demand but prices remained practically unchanged. The cold weather now prevailing should increase consumption and stimulate the demand accordingly.

Florida oranges are beginning to arrive more freely. Three cars comprised the offering today. Fancy Parson Browns ranged $2.25 to $3.30, averaging $3.11 $3.03, $2.91, $2.89 and $2.56. Fancy Floridas ranged $2.25 to $2.80, averaging $2.81, $2.75, $2.61, $2.51 and $2.[illegible] and ordinary stock sold $1.15 to $1.50.

Florida grapefruit was dull and inactive—1400 boxes ranging $1.75 to $3.37½. Cuban grapefruit also sluggish, selling $1.75 to $3.05.

Valencias—	Avge.
Old Mission fy, Chapman's	$7.95
Old Mission, ch, Chapman's	6.85
Golden Eagle, sd, Chapman's	5.25
Lady Rowena, Chapman's	3.90
Sceptre S S Ex	6.10
Butterfly, Covina Ex	4.75
Teal, Covina Ex	3.05
Glendora Heights, A C G Ex	5.50
Pointer, A C G Ex	4.35
Hunter, A C G Ex	2.80
Artesia A H Ex	5.15
Setter, A H Ex	3.15
Prairie Chicken, A H Ex	2.25
Solano, fy or, Stewart F Co	3.00
Sumclass, sd Stewart F Co	2.45

LEMONS—Signal ex fy, Stewart F Co. $6.40; Symbol, $6.20; Sumclass, $4.60.

CINCINNATI, Monday, Nov. 7.—Cool. Market steady on oranges, declining on lemons. Two cars Valencias and one car lemons sold. Also five cars Floridas. Brights, $2 to $2.45; Russets, $1.90 to $2.40.

VALENCIAS—	Avge.
Tiger S B. Colton	$3.75
Solano, fy or, Stewart F Co	2.80
Floral, S B, Colton	3.10
S S Brand, sd, Stewart F Co	2.25

LEMONS—	Avge.
Selected fy ch, N W Blanchard	$5.70
Century	5.30
Choice	3.20
Loma, N W Blanchard	5.35
Lemonspray	4.70

BOSTON, Monday, Nov. 7.—Four cars sold. Clear and cool. Market unchanged.

VALENCIAS—	Avge.
Nonpareil Covina Ex	$4.60
Pointer, A C G, Azusa	4.70
Standard, sd, National O Co	3.70
Teal, Covina Ex	3.60
Orchard, o r, National O Co	4.50

LEMONS—Squirrel, A. H. Arlington, $7.55; Palmtree, $6.60.

PHILADELPHIA, Monday Nov. 7.—Two cars Valencias sold. Also twelve cars Florida oranges. Floridas, $1 to $2.65; average, $2.25. Grapefruit, $1.65 to $3.45; average, $2.50. Prices low on Floridas account condition.

VALENCIAS—	Avge.
Pointer, A C G, Azusa	$3.80
Tustin Gem, Tustin P Co	5.10
Old Oak Tustin P Co	3.70
Hunter, A C G, Azusa	2.85
Honest Pack Tustin P Co	4.10

PHILADELPHIA, Monday, Nov. 7.—Two cars Valencias sold. Thirteen cars Floridas sold. Floridas 80c to $2.50; average, $2. Grapefruit, $1.25 to $3.20; average, $2.30.

VALENCIAS—	Avge.
Stock Label, S T Nordhoff	$2.50
Honest Pack, Tustin P Co	3.75
Tustin Gem Tustin P Co	4.55
Old Oak, Tustin P Co	3.45

ST. LOUIS, Monday, Nov. 7.—Cool. Market declining. Two cars Valencias and one car lemons sold.

VALENCIAS—	Avge.
Teal, Covina Ex	$3.35

LEMONS—	Avge.
Corona Beauty, Q C, Corona	$4.35
Camel, Q C, Corona	3.25
Justrite Q C, Corona	3.95
LaCorona, Q C, Corona	3.60
Grove, Q C Ex, Corona	3.55
Family, Q C, Corona	3.00
Monrovia, Q C Corona	2.40
Silence, Q C, Corona	2.60

PITTSBURG, Monday, Nov. 7.—Two cars sold. Market steady on oranges. Cool.

VALENCIAS—	Avge.
Pointer, A C G Lateeen S	$4.80
Coyote, O K Ex	3.10
Hunter, A C G, Lateen S	3.50

CINCINNATI, Monday, Nov. 7.—One car Valencias sold. Market unchanged. Cold.

VALENCIAS—Quail O K Ex, $4.65.

CHICAGO, Monday, Nov. 7.—Lemons easy; boxes, California choice to fine, $6.00@6.50.

Orange offerings are increasing trade fairly active. Boxes, late Valencia extra choice, 96s, $3.25; 126s, $3.50; 150s and 216s, $4.50; choice 96s, $3; 126s, $3.25; 150s and 216s, $4.25. Navels California, 126s to 216s, car runs, $3.00@3.25.

CORNING BEEF.

The pieces commonly used for corning are the cheaper cuts of meat, such as the plate, rump, cross-ribs and brisket. The meat should be cut into medium-sized pieces, so that it will pack well in a jar or barrel. It should be well cooled and corned before decay sets in, or it will spoil the brine. For each 100 pounds of meat, weigh out 8 pounds of salt, and sprinkle a layer of about a quarter of an inch in depth over the bottom of the vessel, and then pack in a layer of meat five or six inches in thickness. On top of this put a layer of salt, followed by a layer of meat, until all the meat is packed in the vessel. Keep enough salt for a good layer over the top of the last layer of meat. After this has stood over night, add, for every 100 pounds of meat, 4 pounds of sugar, 2 ounces of baking soda, and 4 ounces of saltpeter, all dissolved in a gallon of warm water. When this is cool, pour it over the meat and add enough cold water to cover the meat. Weight it down with a loose board, held in place by a clean stone, to keep the meat under the brine. It should be left in the brine for from twenty-five to forty days before it is ready for use.—W. H. Tomhave, Minnesota University Farm.

Don't sell the best of the flock because you can catch them easier. Cull with judgment.

FENCE POSTS.

The U. S. Department of Agriculture estimates that the farmers of the single State of Iowa use every year $1,400,000 worth of new fence posts, which cost the equivalent of $600,000 for setting them in the ground. Further, the Department officials believe that a part of this expenditure might be saved.

The opportunity for economy is found, first, in using the kinds of posts which, taking into account both cost and durability, are cheapest in the long run, and second only, by treating the posts to prevent decay, particularly those which decay most quickly. When a farmer sets a post which will have a comparatively short life, he loses not only through having to buy a new post but also because of the additional labor involved in setting it. It is true that in both cases no money outlay may be involved, for he may set the posts himself, after getting them from his own woodlot. Of the posts used last year in Iowa, seventy per cent, it is estimated, were grown on the farms where they were used, or were obtained from other farmers or woodlot owners, and only thirty per cent were bought from lumber dealers. Nevertheless, the farmer is out his labor and the part of the product of his woodlot which is used up, even though he does not pay out any cash. The average life of a fence post is stated to be fourteen years and the average cost 13.7 cents.

If all were determined to play the first violin we should never have a complete orchestra. Therefore, respect every musician in his proper place.—Robert Schumann.

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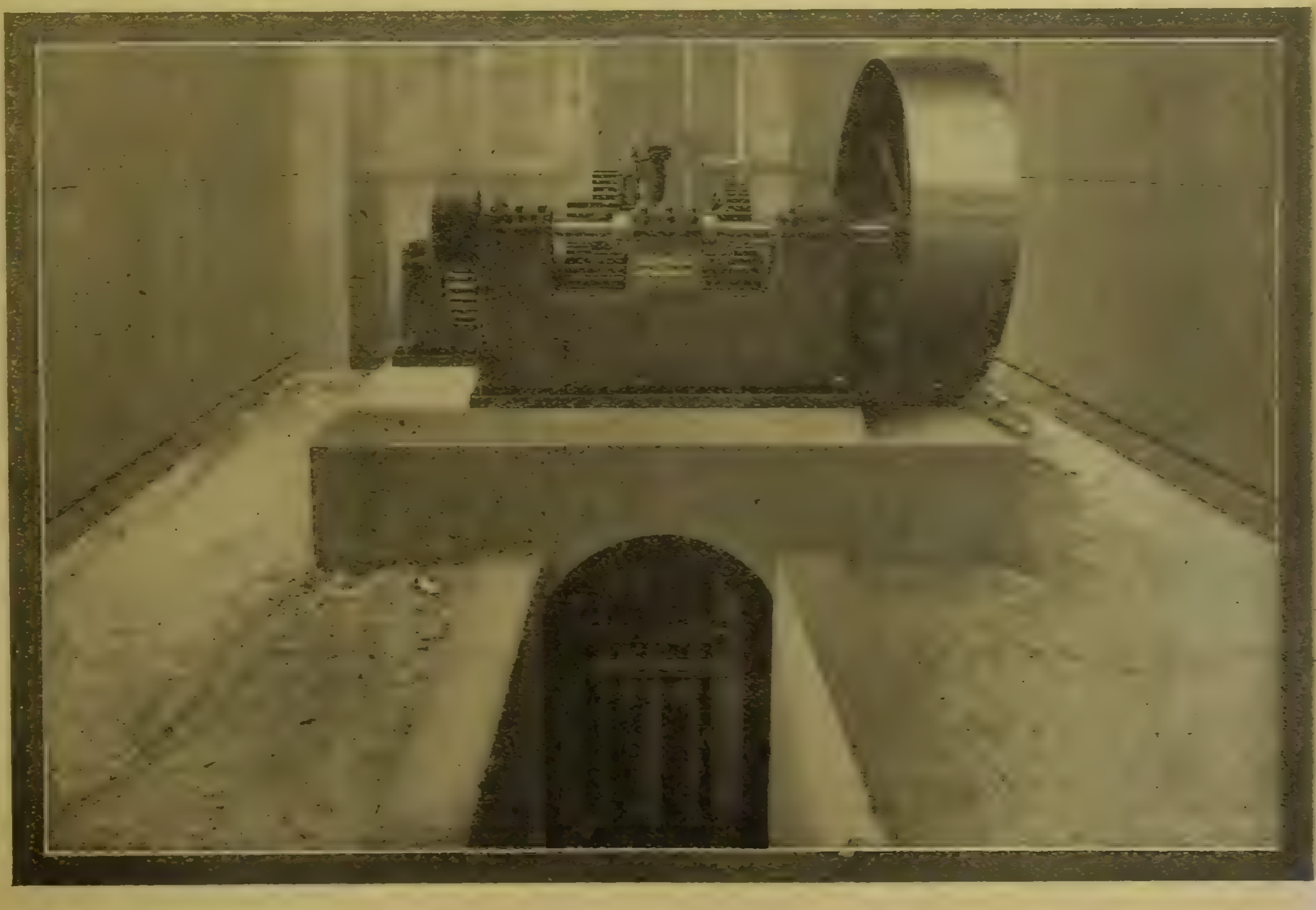

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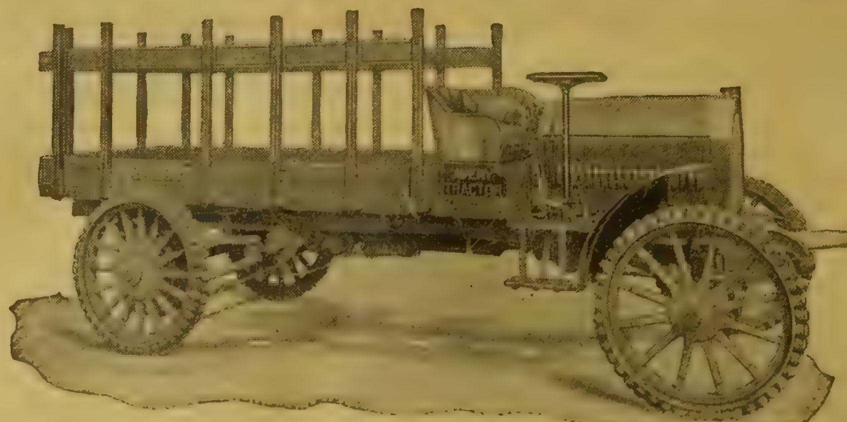

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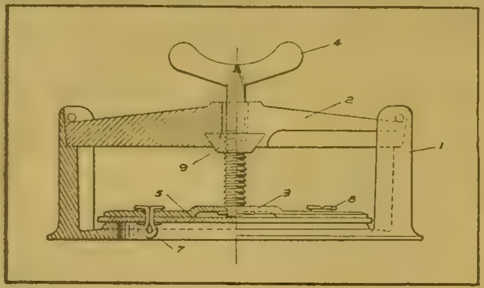

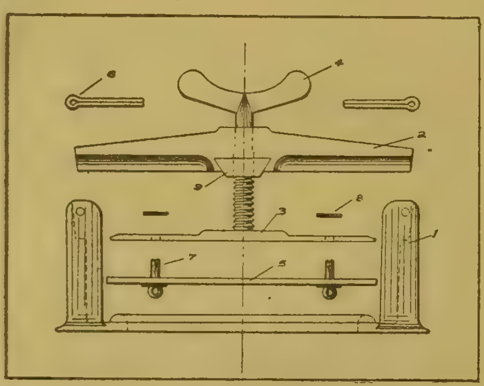

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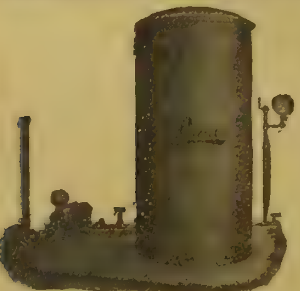

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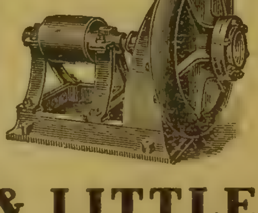

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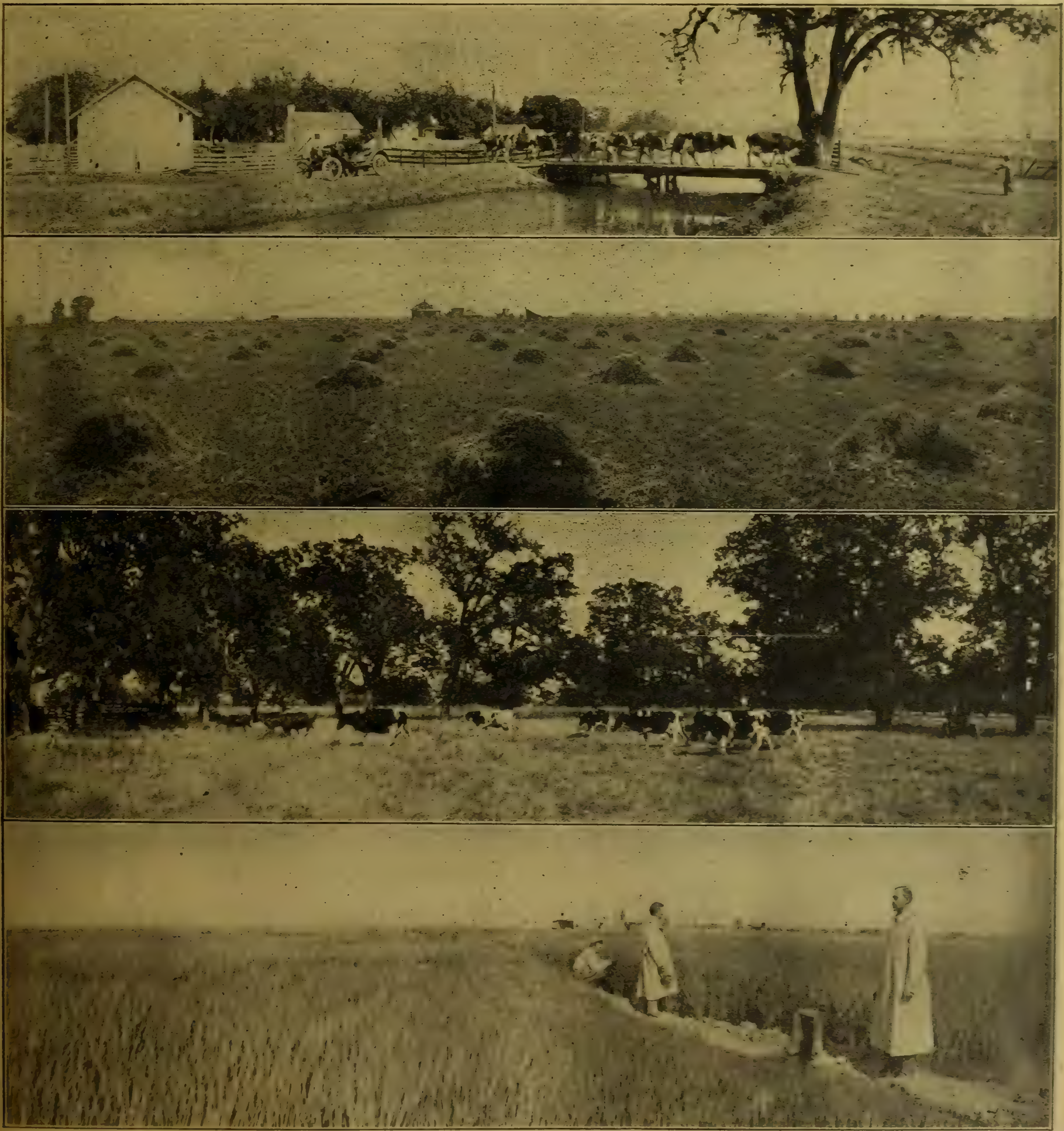

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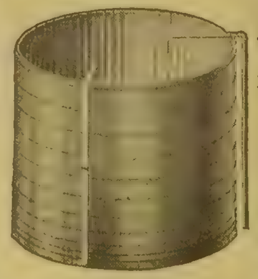

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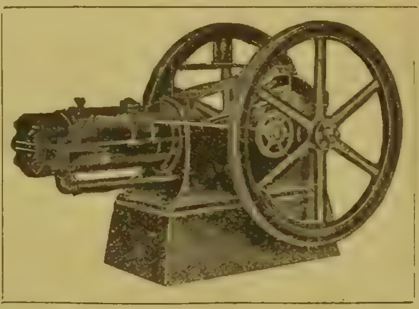

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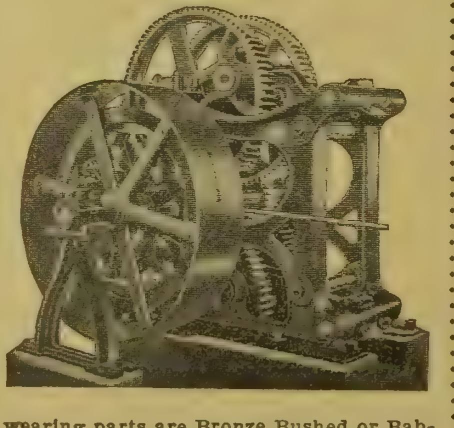

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California Cultivator

Vol. XXXV—No. 20 Los Angeles, California, Thursday, November 17, 1910 Subscription $1 a Year

Root and Subsoil Conditions as Related to Tree Life

An Address before the Citrus Growers' Convention at Pomona, by Prof. Elmore Chase, of Fairoaks, Sacramento County, California

The orange tree in our land and in our climate is an exotic. May there not be some suggestion towards a solution of some of the problems that confront us by noting the conditions where the tree is indigenous and where it is an exotic? We know that the soil of its home was very rich and very deep and that the trees grew to be centuries old, and from the meager knowledge we have that the period of productiveness was continued with the age of the trees. W. D. Howells in his "Indian Summer" describes the garden as having orange trees hundreds of years of age, laden with fruit. Our inquiry along this line of thought will be confined to subsoil conditions, treating of the root system physiologically, and of the inert subsoil, that is, soils that contain plant foods that are unavailable. This will not include hardpan and such like unfertile material.

Root System.

The root system of the orange tree is notably a great feed getter. It is capable of adapting itself to the work of taking from the soil all the food a vigorous and rapidly growing tree may demand both for wood and for fruit. No root system works more energetically or penetrates with greater persistence through resisting difficulties than does this ancient sour root when budded to a navel orange. When the tree has been planted in a hole made by blasting through hardpan and the root system has taken the food within this cavity and encounters the solid wall, it climbs upward till it reaches the soil above and penetrates this soil in search of food. Sometimes in creeping up the wall of hardpan, it penetrates a crack and in passing through this crevice it flattens itself out and after reaching the soil beyond it assumes its natural shape and keeps at work gathering food. Many instances have been noted where the lower roots of a tree which descend into the ground with an angle and reach the depth where there is excessive moisture, that the lower ends of these roots will die and the living ends near the tree get a diminished supply of food. Immediately at this point, adventitious fibrous roots are sent out. These creep along the dead portions just beneath the bark. These roots are so numerous that the bark is forced open and a temporary supply of food is secured. Every orange grower is familiar with these masses of feeding roots that come so near the surface if the soil is not stirred. This interesting character of the root system emphasizes the importance of deep soil supply of plant food.

Where hardpan is less than two feet from the surface, however rich and fertile the soil may be above, the root system hugs close to the hardpan, reaches out a great distance from the tree and sends up its mass of fibrous feeding roots to the soil above. With proper care such trees will produce an abundance of fruit many years—how many is not easily determined except by actual experiment. It may be laid down as a fact that wherever the root system is repressed by soil conditions such as hardpan, compact gravel and inert soils, and these conditions cannot be overcome, orange growing will be a failure.

There is one feature of the root system which should not be overlooked in this discussion. It may suggest some idea which will help in the solution of this problem. It is well known that the visible roots of the tree, however small, do not directly take the food from the soil. The real organs which take up the food held in solution in the water of the soil, are very minute root hairs. These are co-existent with the foliage. On deciduous trees when the leaf has ceased its function, the root hair also ceases. These root hairs are deciduous with the leaves. In the absence of these the root is no longer capable of taking in food. This is the case with all deciduous trees. They are dormant for a period of time and that time is when the weather conditions are not favorable to the growth of trees. The orange tree is an evergreen and except in the northern climates, never ceases to grow. Its root hairs or feeding organs are always present and active. May it not be that by means of this activity the orange tree may suffer by the vicissitudes of soil and climate? Are they not exposed to dangers which the deciduous tree escapes? May not this difference in the action of the two root systems, the evergreen and the deciduous, suggest methods of treatment which recognize this action of the orange tree?

Sub-Soil.

The principal function of soil is to hold plant food in store for the use of the plant. A fertile soil is a soil that has in it plant food to be supplied to the plant on demand, hence any soil qualified to take plant food on deposit, and hold it subject to the demand of the root system, may be considered fertile soil. It is a rich soil or a poor soil according to the amount of stock it has on hand . An inert soil is a safety vault locked up and the key lost. It cannot receive, deposit or pay out what it may have in its possession.

The question of inert soils in the Sacramento Valley is a new one. It is not strange that these soils so compact, impervious to water, which have lain undisturbed for unknown ages are considered unfertile and of no more use to the tree than so much hardpan. There is no doubt that there are very large areas of such soil quite rich in plant food. This food can be made available by some methods of cultivation and means of fertilization. The investigation of such soils is so recent that but little knowledge has been acquired concerning them, but enough has been done to lead to some suggestions and to create a new interest in soil studies. A brief reference to a few typical cases is all that can be given in this paper.

A ten-acre tract of land with a depression running diagonally through the field is a case in point. The land on both sides slopes gradually towards this depression. On one side the higher portion is underlaid with hardpan or impervious soil. The examination was begun to determine why the trees in the lowest portion were unthrifty, dwarfed and dying. The soil was found to be of good depth and fertile for two feet. Below this was a sub-strata of compact soil which prevented drainage. The ends of the roots of the trees were found to be decayed, such as would be the case with excessive moisture. The examination of these roots showed the sending out of adventitious roots beneath the bark as mentioned above. There was no disease connected with any tree except some slight evidences of gummosis, which however, is not a disease. The following remedy was prescribed. Before the winter rains began, a surface drainage ditch was made through the lowest portion of the hollow for the purpose of draining the surplus winter rains. The trees were to be severely pruned back, a good coat of stable manure plowed in in the spring, and deep cultivation to follow. The summer irrigation was to be moderate and care was to be taken that no more water was allowed on the side hills than could be retained in the soil. The result was that every tree thus treated sent forth during the past season a marvelous growth of wood. The new life given to this half acre of dying orange trees was in no way due to the action of the inert subsoil; but unless this subsoil can be brought into activity, the productive period of all of these trees is limited to a few years.

Another class of subsoils though not wholly inert, owing to its compact nature is of low fertility. The trees were planted with very great care. Very large excavations were made and filled with surface soil. These trees from fifteen to twenty years old, have been yielding moderate returns and are still in a very fair condition, but it is evident they have about reached the limit of profitable orange growing.

Another type of soil quite common in this valley consists of a heavy clayey soil but very rich in plant food seeming well adapted to growing the orange tree, but between this upper soil and a subsoil is a shallow layer of hardpan. This tract was planted twelve years ago and at six years of age the trees, though bearing quite heavily for their size, ceased to show signs of further improvement. After changing owners three or four times, it was bought by the present owner. His thorough cultivation began to make improvement. He found many trees failing to respond and some were dying. They had all been planted in holes blasted out by dynamite. The tap root would go down to subsoil, but the trees as a whole were slow to respond to better culture. The owner dynamited the whole tract between the rows where the hardpan existed and completely broke it up. By adding various fertilizers and by careful cultivation, these trees now twelve years old, are most of them considered large for their age and are bearing a profitable crop of oranges and have been for the last five years. These examples are enough to suggest a very important idea. Unless soil has the depth of two feet or more above hardpan or any unfertile subsoil, citrus culture will not pay for the outlay as well as some other fruit. Hence it is of the greatest importance to all who think of growing citrus fruit for profit to examine thoroughly the condition of the soil even before money is invested in its purchase. If the soil is of good depth and any hardpan or impervious soil beneath this soil is capable of being broken up, then it can be made a good investment. It is the want of capillarity in soils that renders them inert or infertile. In order to bring all soils into first class conditions for the growth of plants of all kinds, we must increase the capillary attraction of the soil to make it porous, capable of receiving and delivering air and water. We have two very efficient agents for producing this result, one mechanical and the other vegetative.

How to Prepare Soil.

First let the land be surveyed and staked for tree planting. Make a plot of the land and then dig the holes for all the trees very wide and very deep, shooting them with dynamite wherever needed till a complete drainage is obtained. Then let the holes be filled with good soil so that the surface when settled shall be even with the adjacent ground. Give this soil, whether hardpan or compact soil, a thorough plowing with dynamite everywhere between the holes. This should be followed by a very deep plowing with a strong team. The irrigation system should then be established and the whole field thoroughly prepared for alfalfa growing. Keep this in alfalfa not less than five years when its root system will be down deep in the ground penetrating the inert soils. Such a preparation for planting will secure at the age of ten years, an orange grove giving larger returns than are generally received from a fifteen year old grove planted in the ordinary way. During the first five years, this field according to F. C. Story, president of the California Fruit Growers Exchange, will be producing the safest of all crops and the most remunerative grown in California. The work of preparing the land after the period of alfalfa will put the soil in prime condition with abundance of fertility sufficient to bring the trees to bearing condiiton. The depth of such a soil will give absolute freedom to the root system and enable the soil to hold and assimilate any amount of fertilizers that the grower may deposit. The trees may be given such a bank account of stock, that we may have good reason to expect a period of undiminished fruitfulness for more than one generation. All our planted orange groves may have this fertile soil brought to activity by degrees, by deeper cultivation not too close to the tree, and by using dynamite freely, and growing during the winter season cover crops which have long roots. Stable manure fertilization along with the deep rotted cover crop, will make rapid progress towards quickening to life activity the compact inert soils in our existing orchards.

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Every time your clippers pierce an orange's skin you open the way to decay. Usually the cut is too small to *notice*—and the bruised one is crated with the good. *You* know that *one decaying orange may spoil an entire crate*—you lose just that much money. You *won't* bruise fruit if you use

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Citrus and Tropical Fruits

BLISTERS.

The story that great damage has been done to the citrus fruits of Tulare county by the lime-sulphur-tobacco spray has gone the rounds of the press and now experts come with denial which seems conclusive. If the spray does no harm and is necessary for protecting the fruit from the thrips, it is unfortunate, to say the least, that it was started.

We have a letter from Mr. J. R. Shoemaker, of Visalia, in which he refers to work in his orchards, three sprayings, next to the largest acreage in the district, with only one orange in orchard complained of as blistered. In addition, Mr. Shoemaker incloses the following report of Entomologist Horton:

An article in the July 1st issue of the Porterville Messenger, headed, "Lime Spray Badly Scales the Oranges," was recently brought to my attention and has caused a good deal of discussion among orange growers, and some little anxiety perhaps among a few.

For the benefit of those who are vitally concerned in the control of the orange thrips, it seems that the facts regarding the particular injury which caused the article referred to above to be written, should be stated.

On July 5th a trip was made to the Sunnyside district, where it was claimed that "a large proportion of fruit hangs on the trees badly blistered. The first orchards visited were those of Mr. Carr and Mr. Hemphill, both thoroughly sprayed with lime-sulphur and tobacco extract according to directions given by the Bureau of Entomology. Mr. Carr's orchard is situated east of the road and extends well up on the hill, where it is well known the temperature is greater than in the lower land west of the road. With the owner and Mr. Smith a careful search was made in the upper portion of this grove, but not a single orange or leaf could be found which showed any sign of "blistering," from whatever cause. Mr. Carr stated that he had seen no injured fruit on the place.

Mr. Hemphill's grove begins a mile or so south of Mr. Carr's and extends from the road west to the canal with a block also between the canal and the railroad track. In one block of perhaps 200 trees, just across from his house and between the road and canal some damaged fruit was found. The amount can easily be estimated, and roughly, would be about 2 per cent, or two oranges in every hundred. A similar condition was found in a young grove about one-quarter mile north of this.

At first glance it would appear that such injury occurring in fruit known to be sprayed must be caused by the spray. But this hasty conclusion was not borne out by the facts.

In the unsprayed orchard adjoining Mr. Hemphill on the north and lying between the two sprayed blocks, where the injury was first found, some of the oranges showed exactly the same injury. No other portions of Mr. Hemphill's grove than those mentioned showed any of this so-called "scalding."

A sprayed grove just across the road from Mr. Hemphill's and further up on the hill was next carefully searched for injured fruit. Not a single orange showing even slight "scalding" could be found. This grove was sprayed by the same men who sprayed Mr. Hemphill's, using the same outfit.

The next grove examined was Dr. Barber's, lying further over on the east slope of the hill. A portion of this grove was sprayed during the hottest days of the month, yet no injured oranges could be found there.

Not a single complaint of any injury that could be attributed to the lime-sulphur spray or to a combination of this spray and great heat has come to my attention from any other part of the orange district.

However, a careful examination was made of foothill groves in the Lindsay district. One of these lying well up on the hill east of Lindsay, the other two in the El Mirador district, all chosen because they are located in high, hot sections and were sprayed on the warmest days. Not a trace of this injury could be found.

Now, just what caused the discoloration and toughening in the rinds of those few oranges at Sunnyside, which has given us this alarm, is very hard to say. But there is good evidence that some other conditions than lime-sulphur and great sun heat must be present.—J. R. Horton, Bureau of Entomology, U. S. Department of Agriculture.

LOUISIANA ORANGE CROP.

This year's Louisiana's orange crop will exceed last year's crop by several thousand boxes, providing weather conditions are favorable, say the big packers and shippers and the transportation people who have been through the groves. Last year the crop was damaged to some extent by the heavy storms, but the total movement was greater than the year before. So far conditions have been favorable. Fully 75 to 80 per cent of the crop is grown in Plaquemines parish along the Mississippi river extending seventy miles from above Happy Jack to Venice, but the industry is gaining ground in other districts, there being several points in Vermillion and Acadia parishes which will ship this year.

The fruit is rapidly maturing and began moving in a small way about October 1.

The crop is estimated at about 325,000 to 350,000 boxes.

The quality of the fruit is said to be excellent and of desirable size. Dealers will make a great effort to give the Creole oranges a wider distribution this year than last.

NITRATE OF SODA.

It would seem profitable to the orchardists to know all sides of the fertilizer material question; therefore I beg to call attention to these facts: that while theoretically, the continued use of nitrate of soda should cause an accumulation of carbonate of soda in the soil, yet there are several factors operating to prevent this from being realized. All plants assimilate some soda, thus withdrawing so much from the soil. Another portion is substituted for potash in its insoluble forms, thus rendering the latter available while in effect eliminating its equivalent of soda from the soil. Still another portion by double decomposition with any sulphate of lime in the soil or that may be added, forms the relatively harmless sulphate of soda and the beneficial carbonate of lime.

As a matter of fact superphosphate of lime is frequently used with nitrate of soda and this contains about four per cent of gypsum,—sulphate of lime.

But even without the operation of these factors, it is so easy for the rancher himself to know positively if the "black" alkali is present by simply applying a little strip of red litmus paper to the wet soil. In view of this fact and the unquestioned profit resulting from the use of nitrate of soda, it would hardly be wise or profitable to curtail its use on this account before any sign of danger is seen.

But even the "white" alkali must not be increased beyond a certain limit. The California University investigators found orange trees apparently thriving in soils containing 18,600 pounds of sulphate of soda in the first four feet, while the figure for lemon trees was 4,480 pounds.

If the rancher should use sufficient water, without regard to soluble salts, these would doubtless be carried down below with efficient mulching.

A simple laboratory process will determine accurately at any time the extent of concentration of these salts in the soils.

The farmer must use every factor of success, and then apply the proper controlling factors, to reach the greatest measure of success.—R. R. Snowden, Chemist and Soil Engineer, Los Angeles.

OWN YOUR PACKING HOUSE.

Most citrus growers of California own individually or through associations, packing houses, but a few do not, and many grape and deciduous growers do not. For such there may be a lesson in the following from Florida Fruit and Produce News:

The associations affiliated with the Florida Citrus Exchange will have soon perfected their plans for handling their fruit the approaching season. In making these plans it is well enough to keep in mind the fact that the successful associations are those who have acquired their own plans, employed their own packing house managers, and run their business independent of any contractors; whereas, those who have had their work done by contractors have had more or less dissatisfaction among their growers. This is a natural consequence. A contractor's interest is in getting the greatest amount of money out of his work. He counts the cost to himself, and if he can save a penny here or another penny elsewhere at the cost of his grade and pack he consults his own interests before he does those of the grower. He is not in touch nor in sympathy with the association and does not see beyond the life of his contract. The growers should own their own packing houses; which should be equipped with modern machinery and under the management of a board of directors which should meet regularly once a week on a given date, at a stated hour. These meetings should be attended regularly in order that the directors may know what is going on, not only in their own packing houses, but in the Sub-Exchange, in the Central Exchange, and in the markets. It is only by pursuing this course that they can avail themselves of the information which is furnished them by the Central and Sub-Exchange, and for which they pay. Some associations have paid the past season to contractors enough money to have paid a large part of the purchase price of a new plant which they might have owned. These profits to contractors are lost to the growers, whereas they might have been a saving to them as an investment in a packing plant. If any association would lay its plans to own its packing house and assess each grower 5c. or 10c. per box, according to the size of the association, they could in two or three years own a plant in which each member of the association would have vested interests. They would in this way feel more closely identified with the organization, and have an interest in pulling together with their neighbors for its support. A grower whose fruit is packed by contract in a rented house may feel that he has no interest in the organization beyond the current season.

These are points that every association should consider well. The Florida Citrus Exchange exerts every effort to secure the highest market price for the fruit furnished it by the associations, but it is impossible for it to make a satisfactory showing to the growers themselves if the expense is too heavy through improper management of association packing houses.

USEFUL BACTERIA.

In their relation to man, bacteria may be said to be both harmful and useful. Our attention has been repeatedly called to the hostile ones, but almost nothing has been said about the immense good we derive from others. In terms of dollars and cents, it would be practically impossible to estimate the value of germ life to the agricultural world. Soil bacteria are largely responsible for the increased fertility which results from resting land, or what is known as fallow cultivation. The complex organic substances found in the soil, together with the green crops and the stable manure which are plowed under, would all remain, for the most part, unchanged and of no use as plant food, were it not for the decomposing action of bacteria. When the soil is supplied with the requisite moisture and the proper temperature, the millions of germs which make this their home utilize the complex substances present for food and incidentally change the composition of this manure and other material so that it becomes available for the use of plants. In this way thousands of pounds of nitrogen are returned to the fields every season, which, without the aid of the soil organisms, would remain locked up forever so far as growing crops are concerned.

Again, there are those bacteria which, both independently and when associated with our leguminous plants, are able to take nitrogen from the air and incorporate it in the soil where it can be of some benefit to vegetation.

Nitrogen is not the only substance with which soil bacteria are concerned, for by their activities many insoluble compounds of potash and phosphoric acid are made soluble so that the feeding roots of plants can utilize them.

Were it not for bacteria and moulds, there could be no such thing

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as decay, and there would be hundreds of dead plants and animals about us on every side, and it would be only a question of time until there would be no room for the living.

The acetic acid germ is the principal constituent of "mother of vinegar," and it is this germ that we introduce when we add "mother" to hard cider to change the alcohol into acetic acid.

Pure cultures of germs, known as starters, are added to cream now days to give the butter which is made from it a grassy or other desirable flavor.

Many of the fermented beverages, notably the fermented milk drinks, owe their pleasant and peculiar flavors to certain micro-organisms.

All vaccines and antitoxins which are employed in treating different diseases are produced by the use of a virus or pure culture of a specific germ.

Finally, there can be no doubt but that many of the bacteria, which are taken into the stomach with the food, aid very materially in digestion.—Walter G. Sackett, Colorado Agricultural College.

MARSH'S SEEDLESS POMELO (GRAPE FRUIT.)

THE FREEZING OF AN ORANGE.

On the night of December 29th last, when a severe cold wave swept over the south, Civil Engineer Merriweather, an orange grower of Winter Park, Florida, made a series of experiments to determine the effects of the cold on oranges. Through a small hole, made in the rind of an orange hanging upon a tree, he inserted a thermometer, forcing the bulb into the pulp. The rind fitted closely about the stem of the instrument. At periods of an hour he read the thermometer, finding that at 9 o'clock it registered 43 degrees; at 10, 40 deg.; at 11, 37 deg., and at 12, 35 deg. At midnight he suspended another thermometer near the orange, in order to observe the outside temperature as well, and the following results were obtained:

Time	Immersed Bulb	Free Bulb	Time	Immersed Bulb	Free Bulb
12:00	35	12	5:30	26	24
12:30	33	31	6:00	30	23
1:00	32	30	6:30	30	23
1:30	32	29	7:00	30	24
2:00	31	29	7:30	30	25
2:30	30	28	8:00	30	27
3:00	29	27	8:30	30	30
3:30	29	27	9:00	30	32
4:00	28	26	10:00	30	35
4:30	28	26	11:00	32	38
5:00	27	25	12:00	40	40

It is interesting to note that from 5:30 to 6:30, when the temperature of the outside atmosphere was going down, the temperature of the orange was rising, a phenomenon that is very puzzling and difficult to account for.

BETWIXT TWO EVILS.

The Kind Old Gentleman—What's the matter, my little man?

The Little Boy—Boo-ooh; I'm so c-c-c-cold.

The Kind Old Gentleman—Well, why don't you go indoors?

The Little Boy—'Cos muvver says she'll warm me if I does.—The Sketch.

Florida Sour Seed

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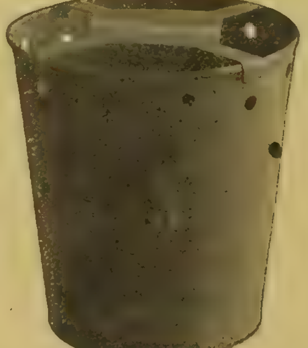

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VALENCIA AND DENIA RAISIN CROP.

The raisin season now opened promises to be one of the most abnormal, even in a trade subject to extraordinary vicissitudes. Prices opened at the equivalent of $4.50 per hundredweight for average quality delivered in bulk and unclassified in packing stores, but instead of dropping, as is usually the case after the first few days of speculative excitement, values continued to advance, and at the end of the first week stand at the following high quotations per hundredweight (112 pounds) for ungraded raisins as they come from the drying floors.

Ordinary, $4.86 to $5.04; good quality, $5.13 to $5.40; superior, $5.49 to $6.30. These rates are about $2 above the average initial prices of the last five seasons. Crop estimates for the region continue low, none of the latest exceeding 19,000 tons, against averages of 25,000 to 30,000 tons in recent years, while later advices from Smyrna and the Levant report a crop of Sultanas of only 20,000 tons, against a normal crop of 50,000 tons.

The difficulties, however, of even approximately estimating the size of the raisin crop where no expert or official statistics are available appear to be considerable, and it is interesting to note that several leading merchants are inclined to treat the low-crop estimates with skepticism and reserve. They point out that, notwithstanding the reported damage to last year's Denia raisin crop by rains during the drying period, 7,000 hundredweight more than in 1908 were exported; that the reports of small raisin crops at home and abroad and high opening prices will probably induce muscatel grape growers in the outlying sections of this district, whose fruit ripens later and who usually sell their grapes fresh for table consumption on home markets, to convert the bulk of their crop this season into raisins; that the Sultana crop, estimated last season at 45,000 tons, actually yielded 55,000 for export; that currants, estimated at 145,000 tons, produced the enormous crop of 185,000, or 40,000 tons in excess of estimates; that the consumption of Denia raisins in the largest consuming centers, London and Liverpool, has not increased in twenty years. Finally, they say that prices current at Denia up to the present are purely speculative or nominal, as no orders have been booked at such rates and no exports realized, and that Canadian importers to whom offers of superior grades were made from Denia at 27 shillings ($6.57) c. i. f. declined to speculate, alleging that the finest seedless California raisins could be purchased for less money on Canadian markets.

At the beginning of the present season there remained unsold at London about 6,400 tons Sultanas, old stocks from previous crop, which would only require to be supplemented by 1,000 tons from the new crop to supply the total average yearly consumption of 7,000 to 8,000 tons Sultana raisins on that market. The same line of argument applies equally to Liverpool, where important stocks of Sultanas remained on speculators' hands at the close of last season. Prices at Denia, according to latest advices, show a marked downward tendency, and it is evident that no orders could be obtained from any foreign markets at the rates quoted above, but, on the other hand, growers who are not in immediate need of money, and can hold their crop will not sell at present at less money, as they are convinced of the extreme shortness of raisin crops everywhere in Europe.—Consular Reports.

GREAT PLANT GARDEN

Chico has been favored the past day or so by a visit from David Fairchild, who is in charge of the foreign seed and plant introduction for the United States, and therefore the superior officer who directs in a general way what shall be done at the National Plant Introduction Garden near Chico.

Mr. Fairchild has been connected with this department for many years and has therefore had an opportunity to realize in results of importance to the nation the immense value of the work. He planned to visit the Garden this year when P. H. Dorset was here, so that they might go over together that which had been accomplished and plan for the future. Together they have visited every nook and corner of the garden, noted the condition of the innumerable plants which have been gathered from practically all parts of the world, and found in quite a number evidence of value.

That Mr. Fairchild is not only satisfied, but delighted, with the progress made at the National Garden here with the limited amount of funds available, was quite evident in the course of an interview with a Record representative yesterday; but he, as other men who give their life to working out problems of plant life which require years to prove, is only an enthusiast in thought and action, and not in words. When a foreign plant has been introduced giving promise of value, it is his plan to assign it to the garden, there to be propagated and tested, and generally distributed to persons known to have the ability and inclination for further developing it.

In the course of an interesting interview with Mr. Fairchild yesterday, he told of two plants which had been imported and cared for at the local garden, and which give promise of becoming profitable plants for cultivation in this country. One is the jujube, a tree extensively cultivated in China and which bears a fruit which very much resembles the date. This was imported in 1905, and at the Chico garden has been brought into bearing. Mr. Fairchild has great hope that this will prove to be a success in this country, affording a profitable crop and an important adjunct to the present food supply. The fruit preserved is slightly less sweet than the date, which is not a disadvantage, and the flavor is as pleasant as that of the date.

Another plant to which Mr. Fairchild called attention, simply by way of illustration of the work that is being prosecuted, is the carob, grown extensively in the Mediterranean district, principally as a fodder plant. Its fruitage is imported quite exten-

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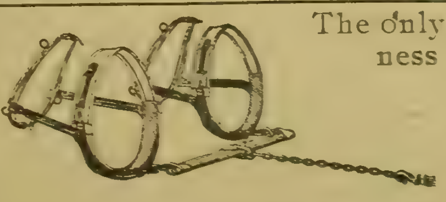

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sively, and by some it is claimed that as a fodder it will excel alfalfa. It is a tree which grows, under favorable conditions, to a height of from thirty to forty feet and bears heavily of a long pod, which, when ripe, may be knocked from the tree with bamboo stocks. The pods are very rich in sugar, the percentage of sugar running sometimes as high as 40 per cent. This is the principal export of the Island of Cyprus.

Reference was made to these importations only for the purpose of illustrating the real purpose of the National Plant Introduction Garden, for essentially the garden is not an experiment station, but one for the reception and care of promising plants.

Mr. Fairchild emphasized another important point in connection with his work, viz., that while the department of plant industry is prepared to find and import plants from every civilized country in the world, much of the valuable experimentation work is done by individuals not connected with the government, but who take delight in plant-life experimentation. The purpose of the government is to add to the nation's resources by finding profitable plants.—Chico Record.

MICROORGANISMS IN SOIL.

We note in a paper published in Ireland what is there characterized as "the most important discovery of the age" as to soil culture. From it we quote:

"At the meeting of the British Association last week was announced the most important discovery on the knowledge of soils which had been made since the famous one of the fixation of nitrogen was found out some fifty years ago.

"In the Agricultural Section Dr. E. J. Russell described the result of extensive investigations made by himself and Dr. H. B. Hutchinson at the experimental farm at Rothamstead on the part played by microorganisms other than bacteria in determining soil fertility. He explained that bacteria are producers of plant food in the soil, that anything which increases their activity increases the fertility of the soil, and anything which limits their activity limits the productiveness of the soil. He had found that partial sterilization of soil by heat, or treatment with volatile antiseptics such as toluene, led to a notable increase in productiveness. Shortly after the treatment had ceased there was a great increase in the rate at which plant food was formed by bacteria and in the rate of multiplication of the bacteria. This increased activity was not brought about by any heightened vigor in the bacterial stock. On the contrary, it was shown that these organisms were actually weakened by the treatment. It follows, then, that the environment had been improved. When some of the original untreated soil or an aqueous extract of the soil was added to the partially sterilized soil there was at first a still greater increase in the bacterial activity. This had been traced to the addition of the more vigorous organisms of the untreated soil. Later on there was evidence that a detrimental effect was produced where soil was added, but not from the extract. It appeared, then, that the untreated soil contained some injurious factor not washed out by water, which only slowly makes itself felt when introduced into a clean soil. This factor was put out of action by any poisonous organic vapor, by heating to fifty-two degrees, and similar means. It was difficult to account for the experimental results in any other way except by supposing that soil contained organisms capable of checking bacterial development. Such organisms must be larger than bacteria and not readily detached from the soil, since they do not appear, or not to any extent, in an aqueous extract. Search for large organisms has revealed the presence in every soil so far examined of amoebae or amoebid organisms of colopoda and other protozoa. It was shown that the mixed culture growing in hay infusion was capable of destroying bacteria. It had not yet, however, been possible to ascertain definitely whether these protozoa were active in the soil, although the conditions obtaining in atmosphere saturated with water vapor and a film of water around the particles of soil would seem to be favorable to their development. The direct evidence of the existence of these injurious organisms was not complete. It ought to be possible to put some soil under a microscope and see them, but at present they had been unable to overcome the difficulties of working with an opaque substance like soil under the microscope, but the indirect evidence was sufficiently good to warrant the assumption as a working hypothesis that we had in our untreated soil some large organism capable of keeping in check the bacteria, and so reducing the productiveness of the soil. The term he had used of organism had been used for convenience. Whether it occurred in active form or in the form of something analogous to spores they had no direct evidence."

EACH APPLE BRANDED.

Brilliant in design as their fruits are in beauty, Hood River apple growers have come forward with another novelty that will attract world-wide attention. They are sending out some of their choicest apples with the names of the purchasers painted on them by the master artist, the sun. One dealer has made a contract with the Waldorf Astoria hotel and cafe in New York to supply all of the apples used on the tables and to have every apple bear the name of the famous hostelry imprinted on its side. For this purpose a light aluminum band stenciled with the name of the hotel is furnished the grower. After the apples reach maturity and before they begin to ripen the band is slipped over them as they hang on the trees. The sun reddens all of the surface except the portion covered by the lace-like metal band. When it is removed at packing time the hotel's name is painted in golden-green letters on a deep-red background. The method also insures every apple being exactly the same size. The grower receives 8 cents each for the apples in the orchard. The consumer at the Waldorf pays about 40 cents each. Another dealer has a similar contract with a famous Paris cafe, which furnishes stencils of artistic and elaborate design, and which read in condensed French, "Exclusively grown," etc. The novelty of the thing promises to fully repay all interested for the expense and trouble incurred.—National Horticulturist.

One planter at Indio is planning to put out about 20 acres of date palms next spring.

Garden and Field Crops

THIS MONTH.

Strawberry plants which have been rooted early enough may be transplanted, taking care to have ground thoroughly irrigated before and after planting. We have seen strawberry plants set in dry soil, water to follow after planting and of course immediately. However, the time elapsing before the roots are thoroughly soaked is often sufficient for the vitality to be lost.

Onions may be planted, especially for market, Silver Skin and Australian Browns. Late celery, cabbage, cauliflower, parsnips, turnips, salsify, beets, radishes, horse radish, rhubarb roots, may all be planted and add much to the midwinter vegetables.

A heavy dressing of stable manure may be applied to parts of the garden which will be used for January and February planting. If this is plowed under or spaded in deeply it will put the soil in fine condition and besides aid in holding winter rains.

Continue to gather rubbish and burn or compost for applying on orchard or other parts of the place rather than putting it back on the garden.

FEEDING GARDEN SOIL.

A variety of plants with a variety of plant food requirements are grown in the garden. To meet the growing needs of all these different plants many different kinds of fertilizers must be used on the garden soil. The garden gives large yields in proportion to the area cultivated, and no labor and means should be spared to make it yield abundantly.

We like to begin to fertilize our garden soil early in the winter, in fact, just as soon as the crops are harvested in the late summer and fall. Small amounts of trash and manure accumulate about the buildings and grounds. These amounts when raked up and collected are too small to pay for hitching up to the wagon and hauling to the fields, hence we use the shovel and wheelbarrow and get this stuff on the garden as fast as it is formed. The ashes from our wood stoves are removed at frequent intervals and placed about the base of the grapevines, bush fruits and larger fruit trees. The winter and spring rains leach out the easily soluble potash and other mineral elements of the ashes and carry them to the roots of the fruit trees, bushes and vines for early feeding when spring growth begins. Wash water and other soapy slops are poured on the vegetable garden, the small fruit patch, and on the flower beds. It is true these slops do not contain large amounts of fertilizing elements, but they must be disposed of in some way and it is better to save them for fertilizing food and flower crops than to throw them out in the back yard anywhere or allow them to run away through the underground drain pipe. The dirt and waste about the dwelling can be utilized in the garden soil better than in any other way, and in a few years the fertilization amounts to considerable.

About twice each week the cow lot is cleaned with the rake and shovel and the scrapings, amounting to some half dozen wheelbarrow loads, are removed to the garden and dumped in piles. By spring gardening time these small piles are decomposed and in a fine condition for working into the soil either for the vegetables or for the flower beds. Cow manure is mild and safe to use with the tenderest of plants, as very little heat is given off in decomposition. That which has remained in small heaps over winter in the garden works up in spring as fine as the finest garden loam, and is one of the best all round garden fertilizers tnat can be used.

The droppings from the poultry houses are cleaned out regularly during the winter and either applied direct to the garden soil, or they are mixed with stable manure and applied with it. Poultry manure is very strong and hence should be applied thinly over the surface. A little of it will go a long way. Where coal ashes or other similar absorbing material is used with the droppings there is less danger of over fertilizing the soil with them. The ashes absorb and hold fertilizing elements and when they are worked into the soil they give up these fertilizers as plant foods and at the same time improve the texture of the soil, making it light, friable, and very easy to work. Absorbing material should always be used with poultry droppings, since it makes the poultry house more sanitary and almost doubles the value of the manure.

Where not enough refuse about the home can be secured to properly fertilize the garden during the winter, we use manure from any of the animal stables. In spring all the coarsest portion is raked from the garden and hauled to the fields.

SOIL AND FERTILIZERS FOR ONIONS.

In the past, and even at the present time, most of the domestic onions that supply the markets of the large cities of this country are grown on what is known as muck soil, in most cases land reclaimed by draining swamps. This muck soil consists mostly of organic matter and is usually rich in nitrogen, so much so that the onion grower on these soils uses a fertilizer very low in nitrogen, usually a brand varying from 0 to 2 per cent, and having 5 to 10 per cent phosphoric acid and 5 to 10 per cent of potash, with very good results.

Most market growers grow the onion on upland soils, varying from sandy loam to clay, and, while they have to manure or fertilize more heavily than their brother grower on muck soil, they also produce a better quality onion for their customers. It is well known that quality in a vegetable is so variable owing to environment and climatic conditions as to leave the matter open for discussion. Yet I do not think any one will deny that a good clay loam will produce a better quality, a harder and a better keeping onion that one grown on muck soil. All of this should tend to the grower receiving a better price for the better quality onion.

As to the use of fertilizers no hard and fast rule can be laid down. A study of soil and fertilizer, for the improvement of the crops, as well as increased yields, will well repay the grower for his series of experiments.—Market Growers Journal.

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The Development of an Empire

Wonderful Resources of the Great Valley. Description of Photographs on Cover Page.

The story of a contest of seventeen ranch owners in Glenn and Colusa counties for a highly-bred Holstein cow offered by the Sacramento Valley Irrigation Company was given in a recent Cultivator. It told how the ranches ranging in size from seven to 250 acres were inspected and the winner declared to be the little seven-acre ranch of Mr. Burt. That story had much of intense interest and it is with much pleasure that we offer on the cover page this issue photos showing scenes in the fields of this great empire.

It is an agricultural empire in size and in the range of products—one hundred and twenty-five thousand acres on part of which are now produced oranges, olives, figs, all kinds of fruits, all kinds of agricultural products. The great need is for men, men with a little capital and much ability for work. In this it is typical of other great stretches in the Sacramento Valley.

It was the writer's privilege to take a look on a beautiful October morning at the rice field shown in the bottom photo on the cover. It is not a big field, not as extensive as might be imagined from the photo, but it may be of great extent in results. This field has grown rice of excellent quality, but the future of the crop in that valley cannot be predicted. Abundance of water is a factor in its production. This field is just in the outskirts of Willows, county seat of Glenn county.

The pasture scene in which the Holsteins are luxurating in the rich pasture under the live oaks is some miles from the scene of the lower one; it is down the valley near the Sacramento river. This is one of the herds of the syndicate which is financing this great project. In fact this herd is one evidence of intelligent work being done by the company developing these lands. Only the best of stock is introduced by it and every inducement is offered the settler to breed only highest strains. The Holstein seems to be the favorite breed although Mr. Leonard at Jacinto has a magnificent herd of Jerseys and he and Mr. Guilford, in charge of the development company's agricultural work, have many a scrap over the merits of these two magnificent breeds.

By the way, speaking of Mr. Guilford reminds us of another feature of the work of this company in that these and other expert agriculturists are secured to give aid to those who are developing these rich acres. Mr. Guilford comes to the Sacramento Valley with wide experience in agricultural colleges and practical farm work. His services are at the command of all farmers who have bought lands of the company and to him is due much of the credit for the results shown in the recent contest. This company is following the same plan that the Kuhn Syndicate followed on its Twin Falls subdivision in Southern Idaho. There thousands of Eastern people were placed upon rich acres and happy homes have been made on what was practically desert land. This Sacramento Valley land has been under cultivation for many years but on the extensive plan. The results of the recent contest in which the little seven-acre ranch proved winner will show, it is to be hoped, the greater advantage of intensive cultivation, and instead of great stretches of land given over to grain growing, hundreds of homes will be erected.

The next picture above gives a view of one of the alfalfa fields of the company. This is the seventh cutting of the season and the farmer will quickly recognize the richness of land which places haycocks as close together as are these.

The top picture shows another herd of Holsteins. This showing of the dairying possibilities of this portion of the Sacramento Valley proves the wealth which will be brought to that section. Never yet has there been a dairy country but it was a rich country and continually grew richer.

This will not be a serial story, but we have in hand a number of other photographs which will prove very interesting as showing the productive possibilities of the Sacamento Valley. Some of these will appear in a later Cultivator.

ROOT CROPS.

The culture of root crops for succulent green feed is discussed by E. J. Delwiche in Circular of Information 16 of the Wisconsin Experiment Station. He states the essentials of root culture as follows:

Root crops are valuable for stock feeding, both for their content of digestible nutrients and in supplying succulent feed for the winter months. Under good conditions a large amount of feed per acre can be grown from roots; for this reason they are useful on small farms where the amount of land under cultivation is small.

Roots do best on loam soil, but may be grown successfully on either light or heavy soil, providing the ground is properly fertilized and prepared. Thorough preparation of the soil and an abundant supply of available plant food are necessary for good returns.

Mangels give the heaviest yield per acre, with Rutabagas and Turnips a close second, and Carrots third.

Carrots and Rutababas are about equal in per cent of digestible nutrients, and are higher in this respect than either Mangels or Turnips.

The Mammoth Long Red and Giant Feeding Mangels, the Monarch Rutabaga, and Mastodon Carrot are provisionally recommended as good varieties to plant.

Mangels and Carrots should be planted fairly early, Rutabagas and Turnips somewhat later in the season.

Root crops may be planted in rows eighteen to twenty-four inches apart when cultivated with hand machines, but at not less than thirty inches when a horse cultivator is to be used. Seed should be used liberally in order to insure a good stand. Thinning should be attended to promptly, leaving single plants from eight to ten inches apart, depending on distance between rows and kind of roots grown.

Thorough, yet shallow, cultivation should be practiced throughout the growing season.

Ridging at planting time is helpful on wet or heavy soils.

Roots can probably be grown for less than $2 per ton under good conditions.

The cost of production per acre is approximately $35 per acre.

A consignment of 1800 pounds of seeds from pines and cedars of the San Jacinto Mountains was recently received at the Lytle Creek Nursery near San Bernardino.

REPORT OF THE CONDITION OF

The First National Bank of Los Angeles

AT CLOSE OF BUSINESS NOVEMBER 10, 1910

RESOURCES:

Loans and Discounts			$11,624,457.30
Overdrafts, secured and unsecured			57,410.36
U. S. Bonds to secure circulation			1,250,000.00
U. S. Bonds to secure U. S. Deposits			305,000.00
U. S. Bonds on hand			5,000.00
Premiums on U. S. Bonds			None
Bonds, Securities, etc. (Bonds only)			1,008,825.00
Due from National Banks (not reserve agents)		$1,485,606.52	
Due from State banks and bankers		425,585.16	
Due from approved reserve agents		1,003,480.60	
Checks and other cash items		108,500.81	
Exchange for clearing house		442,856.64	
Notes of other National Banks		110,230.00	
Fractional paper currency, nickels and cents		4,979.67	
Lawful money reserve in bank, viz.:			
Specie	$2,021,559.00		
Legal tender notes	411,700.00	2,433,259.00	
Cash and Sight Exchange, . . .			**$6,014,498.40**
Redemption Fund with U. S. Treasurer			62,500.00
TOTAL, ...			**$20,327,691.06**

No Real Estate. No Furniture and Fixtures.
No Premium on U. S. Bonds.

LIABILITIES:

Capital stock paid in		$ 1,250,000.00
Surplus fund		250,000.00
Undivided profits, less expenses and taxes paid		1,631,516.35
National Bank notes outstanding		904,600.00
Due to other National Banks	$ 1,877,356.91	
Due to State banks and bankers	967,432.01	
Due to trust and savings banks	792,895.69	
Dividends unpaid	2,605.00	
Individual deposits subject to check	10,870,897.33	
Demand certificates of deposit	135,627.36	
Certified checks	43,129.63	
Cashier's checks outstanding	289,870.23	
U. S. Deposits	266,887.22	
Letters of credit	7,693.90	
Total Deposits, ...		**$15,254,395.28**
Reserved for Taxes		6,004.43
Special Deposit—Account increased capital stock		1,031,175.00
TOTAL, ...		**$20,327,691.06**

STATE OF CALIFORNIA, }
County of Los Angeles } SS

I, W. T. S. Hammond, Cashier of the above named bank, do solemnly swear that the above statement is true to the best of my knowledge and belief.
W. T. S. HAMMOND, Cashier.
Subscribed and sworn before me this 14th day of November, 1910.
Correct—Attest:
W. N. HAMAKER, Notary Public.
J. M. ELLIOTT, STODDARD JESS, W. C. PATTERSON, JNO. P. BURKE,
JOHN S. CRAVENS, F. Q. STORY, E. J. MARSHALL, Directors.

Live Stock and Dairy

Dairymen and stockmen are requested to write of their experience. Mrs. Sherman is always willing to answer queries and this, with experience of other workers, will make this department of greater value.

FALL WORK.

By Mrs. M. E. Sherman.

The land is full of the developed maturity of tree and vine and there is a distinct pause, a rest and a softening of autumnal coloring after the strenuous summer time of growth. The golden autumn tones beautify and enrich even the straggling weeds with a magic touch. The birds are quiet except for gossiping chirps, as their season of nesting has passed. The hawk's raucous call in the day time and the coyote's yelp in the night are all that one hears of the wild things on the ranch. The fragrant odor of fresh cut corn and alfalfa mingles with the perfumes of ripe grapes and falling leaves.

Silage.

The soft coughing of the gas engine and the whirring of the cutter as the corn and alfalfa are being rapidly put into the silo fall pleasantly on the ear of the farmer. The cattle stand bunched at the fences, attracted by sight and smell of the green stuff, waiting with drooling mouths until at last a loaded wagon turns into the corral and the feeding racks are filled. Animals are very like human beings in their actions. Some of the younger cows push ahead of the horses, blocking the road in their eagerness to be first. A few snatch mouthfuls as they pass the wagon. Placid Juliana, Cresenta and Ideala remain standing quietly waiting until the rush is over. They have gained the calmness of maturity and trust providence that there will be enough for all. If there is not enough, then it is still better to go without than lose the blessed tranquility and become one of a trampling crowd.

Every year the value of silage increases in our estimation, and when the silo is once full we feel rich in feed. The happiness of the cows is equalled by our contentment when the silage is in the racks in abundance. Alfalfa silage does not give as much of a variety to the food as when we have corn in the silo and alfalfa hay in the racks, yet it is not hard to supply the missing carbo-hydrates by a little rolled barley in the mangers. Usually we have made the corn silage first and then topped the silos with alfalfa. This year we are returning to the way we made the silage at first, mixing the corn in with the alfalfa as it happens to be convenient. The haul from the alfalfa field is a little too long to keep the cutter running steadily if the alfalfa is filled in alone, so we are running the corn in whenever there is a lull in the alfalfa. Whether this mixing will add to the palatableness of the mass the cows will soon let us know by the eagerness with which they clean up their mangers.

The use of silage always improves the thrifty appearance of the cattle as it is full of juices and keeps their skins mellow and soft. While it is feeding water, it is feeding it in the same way that we human beings take in water in fruit and in green vegetables. Alfalfa silage is certainly a great milk producer and should be credited with the results of greatly increasing the milk yield. Each cow is allowed sixty pounds a day when on silage alone—it takes this amount to cover wastes in handling and the portion the cows may wish to eject. It is convenient to feed the cows by allowing that amount to each one and then adding thirty pounds for each heifer. After the evening milking the cows remain in the corral at the barn to eat hay, while the heifers are turned into the silage feeding corral to clean up the silage left by the cows. When the silage is eaten up clean each time, then the right amount has been reached to feed. The cows receive the first choice and the sharper appetites of the heifers clean up the remaining portions without loss.

Value of Corn and Alfalfa.

The need of improving corn in California is great. After buying the best seed I could obtain and carefully selecting the seed ears for the past three years, they still are not extra good, as compared to the standard ears that Dr. Shaw had on the demonstration train. The cost of the corn crop on the ranch this year has been as follows, by the acre: Cleaning the field of stubble by burning it off, twenty cents; one irrigation before plowing, twenty-five cents; plowing with four horses deeply, eighty cents an acre; harrowing, thirty cents; planting, forty cents; seed corn, fifty cents; cultivating, thirty cents; irrigation, forty cents; cultivation, thirty cents; partial irrigation, twenty cents; cultivation, thirty cents; rent of acre of land, six dollars (this includes taxes and irrigation water); wear on tools, fifty cents; a total of nine dollars and twenty-five cents an acre. The crop averages fifteen tons to the acre. The expenses of making silage, cutting by mower, fifty cents; cutting the corn blown over by hand, one dollar, an average price of seventy-five cents an acre will probably more than cover the total expense. Hauling in and putting it into silo is about fifty cents a ton. This is, of course, if the engine does not balk. The price of the work is not prohibitory to any one.

Alfalfa silage costs us somewhat more, as we have to buy it at a distance from home and haul it ourselves. In buying it in the shocks green in the field we pay at the rate of three to one. That is we pay the selling price of one ton of hay for each three of alfalfa. The cost of hauling amounts to sixty cents a ton and it costs about thirty-five cents to put it through the machine. This cost includes the unloading at the cutter. When there is alfalfa alone at hand the cost of the two should not differ greatly in the handling of the silo. The tonnage, however, of corn to the acre is greater than alfalfa. The crop of fifteen tons to the acre is rather lighter than the usual crops we raise. The intense heat of the past summer cut down the growth of the corn by hastening it into tasselling. Then at this critical time the water failed in the canals and

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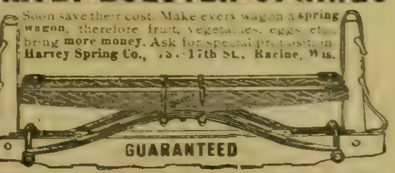

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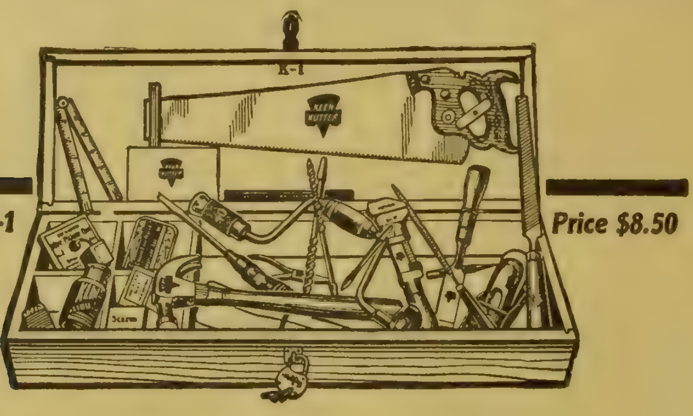

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the corn had to come through by cultivation alone to its ripening. If the water had held out the corn would have been at least two feet taller. There is a further advantage in growing corn that should be considered. The land can grow a crop of peas and oats in the winter time and yet be ready in plenty of time to grow a crop of either corn or sorghum. The sorghum that was cut last month is again coming up and if the present warm weather continues it will certainly produce another bit of grazing for the colts. Pumpkins and pie melons are adding a Thanksgiving touch to the animals' feed at present. The pigs are reveling in the cull grapes and everything seems fat and saucy down around the barns.—M. E. Sherman.

BUTCHERING TIME.

Ruth Brown gives our folks, in Farm Journal, some practical points on curing hams, making sausage, smoking, etc., as follows:

Only animals in good condition and perfect health should be killed for eating, for the flesh of those with even a slight disease is unwholesome, and the meat is very difficult to keep after curing. Bruises, broken limbs, or like accidents, have an effect similar to ill health; and unless the animal can be bled and dressed immediately after such an accident, the flesh should not be used for food, especially if there is any rise in temperature.

A reasonable amount of fat gives juiciness and flavor to meat. "Never kill an animal that is losing flesh," is a maxim of good butchers, for the meat is growing tougher and dryer. Never allow an animal to be excited or overheated before killing. It is important that the carcasses should be cooled soon after slaughter, but they must never be allowed to freeze.

Stripping out the leaf lard aids in quickly cooling a pig. For the best results there should be a circulation of cool, dry air. Meat should be cured as soon as the animal heat is out, usually about twenty-four or thirty-six hours after slaughtering.

This is a well-tested recipe for dry-curing hams and shoulders: For 100 pounds of meat use four pounds of salt. two pounds of bown sugar and a quarter of a pound of saltpeter. Mix these well together and divide into three equal parts. Rub one-third well into the ham and let it stand on a board for three or four days, until well soaked into the ham. Repeat this three times in ten days or two weeks. Take up the hams, scrub them off in warm water, hang up and dry, smoke with hickory or apple chips, wrap closely in paper and tie tightly in a bag.

Where a suitable place for dry curing is not at hand, the meat may be cured in brine, which also gives protection from insects and vermin. During warm weather brine should be closely watched. If it becomes ropy, like syrup, it is best to make new brine, or boil over the old. To brine cure, when the meat is cooled, rub each piece with salt and allow it to drain over night. Then pack it in a barrel, with the hams and shoulders in the bottom, using the strips of bacon to fill in between and to put on top. Weigh out for each 100 pounds of meat eight pounds of salt, two pounds of brown sugar and two ounces of saltpeter. Dissolve these in four gallons of pure water and cover the meat with the brine, after boiling and thoroughly cooling it. The bacon should remain in the brine from four to six weeks; the hams from six to eight weeks.

Meat that is to be smoked should be removed from the brine two to three days before putting it in the smokehouse. Scrub it clean in tepid water, and hang to drain for a day or two before smoking. When smoking, hang it so that two pieces will not touch each other. Make a very slow fire of green hickory, apple or maple wood, smothered with sawdust of the same. Do not use pine, or other resinous wood, as it will give an unpleasant taste. If the smoke is kept up steadily, and an even temperature is maintained, twenty-four to thirty-six hours should smoke it sufficiently. Let it air and dry, then wrap in paper and put in heavy muslin or canvas and cover with whitewash, to which some dissolved glue has been added; or use a yellow wash. To make the latter, for 100 pounds of meat use three pounds of barytes (barium sulphate), a short ounce of glue, an ounce and a quarter of chrome yellow, half a pound of flour. Mix the flour in half a pailful of water. Dissolve the chrome in a quart of water, and add it and the dissolved glue to the flour. Bring the whole to a boil, and add the barytes, slowly, stirring constantly. Make it the day before it is required. Stir often while using, and apply with a brush.

For sausage: To each pound of lean pork add one pound of fat. As the pork is usually from the shoulder, neck, etc., it is likely to be too fat unless part of the fat is removed and made into lard. Mix the fat and lean together in chopping. Where a rotary cutter is used, it is best to cut the meat twice; after the first cutting, spread it out thinly and season. To each four pounds of meat use an ounce of pure, fine salt, a half-ounce of ground, black pepper and a half-ounce of sage leaves, rubbed fine. The second running through the cutter should mix the seasoning thoroughly. Sausage will keep for some time if stuffed in skins or in long, narrow, muslin bags, rubbed over on the outside with lard, to exclude the air; or it may be packed in a jar, with lard run over the top.

COSTLY IGNORANCE.

It is astonishing what a price people will pay for ignorance even in this day of advancing intelligence. An example of costly ignorance in the dairy line recently came to our attention. A California man (you couldn't really call a man of his caliber a dairyman) happened in some rather accidental way to come into possession of a few thoroughbred animals, which in a few years multiplied until he had something like ten head of cows, heifers and a bull. He didn't have sense enough to keep up the registration and in this respect alone dropped several hundred dollars.

Recently he decided to sell them all, and apparently having no idea of the demand for well bred cows and their present day value, through being out of touch with everything pertaining to the dairy business, he sold them to a hustling young creameryman who had them sold before he secured them and cleared up something like three hundred dollars on the deal. The third owner, likewise a wide-awake young business farmer, sold half of them for what he paid for the whole lot and at this the fourth owner of part of the herd was satisfied with the deal. That's going some for cow finance but they finally got up to about the level of their real value. Had the original owner been possessed of good sense he would have known the demand for stock of this kind and at a cost not to exceed two dollars could have inserted a small advertisement in a live paper tapped this demand and saved himself from six to possibly eight hundred dollars. And to think how hard the average man works to get this amount of money into his hands. Truly the farming and dairy business demands more mind and less manual effort.—Dairy Review.

HOG CHOLERA SERUM.

A successful demonstration of the value of the new government serum for preventing hog cholera has just been concluded at South Omaha, Neb., by the Bureau of Animal Industry of the United States Department of Agriculture. The efficiency of the serum has been proved many times in the past, but in order that its value might be brought more strikingly before the people of Nebraska a demonstration was arranged for at the Union Stock Yards at South Omaha in co-operation with the Union Stock Yards Company of Omaha.

The stock yards company purchased thirty pigs, weighing from 40 to 60 pounds each, from a farm which had been free from hog cholera for several years. These pigs were brought to the stock yards, and on July 23, 1910, four of them were injected with blood from hogs sick of hog cholera. These inoculated pigs were placed in a pen by themselves, and within five days they had become sick, at which time eighteen of the remaining pigs were each given one dose of the serum, while the other eight pigs were not treated in any way. The eighteen serum-treated pigs and the eight untreated pigs were then placed in the same pen with the four pigs which had been made sick by inoculation.

The four pigs which were first given hog cholera all died, and the eight untreated pigs all contracted the disease from them. The eighteen pigs which were given serum, and which were confined in the same pen with the four original sick pigs and with the sick untreated pigs, remained perfectly well, and were finally turned over to the officials of the stock yards company upon the completion of the experiment, September 17, 1910.

The experiment was witnessed by representatives of the Nebraska Agricultural Experiment Station and of the Nebraska State Breeders' Association, as well as by representatives of agricultural papers published in Nebraska.

The Department of Agriculture does not distribute this serum to farmers, but is endeavoring to bring the value of this method to the attention of the stock-raising interests in order that they may arrange to secure state funds for the manufacture and distribution of the serum. The government authorities consider that this new serum treatment, if properly applied, will result in the saving of millions of dollars.

THE HABIT OF GOING DRY.

One of the most unprofitable things on any farm is the cow that persists in going dry three or four months before the time for her to be fresh. There is a great deal in habit, and if a young cow is started right she will go dry, say, from four to six weeks. That length of time is sufficient for her to recruit her strength. It will pay to give extra food and care in every possible way to the young cow so as to keep up the flow of milk. If she once forms the habit of going dry for a long period she will be very apt to pass the habit on to her progeny. In the purchasing of dairy cows this habit is one of the very important considerations, as it really marks the difference between the profitable and unprofitable cow.—Michigan Farmer.

DUROC-JERSEY HOGS.

There are three great breeds of hogs, and in the order of their numbers they are Poland-Chinas, Duroc-Jerseys and Berkshires, says a writer in the Western Farmer. The Duroc-Jersey hog is rapidly becoming more popular, and deservedly so. They have all the good points of the Poland-Chinas, but the sows have larger litters of pigs and the ability to save them, while the fat hogs when ready for market outweigh Poland-China hogs of the same age and finish. The Duroc-Jersey and the Poland-China breeds originated in Ohio, and constitute the corn belt type of hog. Long grown by breeders who selected for neatness of frame, a result favored by a ration, principally corn, which consisted largely of fat and carbohydrates, and low in content of protein and calcium salts, hogs of these two breeds are chunky, early maturing and producers of the best lard in the world. Hogs of these breeds are fine of bone and fatten easily at early ages, making possible the large run of 175 and 200-pound hogs that were so much in demand during the present year.

Though of the fine-boned, meat-built chunky type of hog the Duroc-Jersey is not so extreme as the Poland-China, being somewhat larger and possessing more scale. Their color is a rich red or mahogany, and is very pleasing. The faults of the breed are, a tendency towards too large litters of under-sized pigs, faulty backs and a tendency to sandy colors. The writer does not have much faith in the oft-repeated statement that sows of chunky conformation are less prolific and poorer mothers than sows of lankier type, for it would seem that it is a question of being too fat. Instead of a question of conformation, it is one of getting too much fattening food and not enough nitrogen and calcium phosphate and other needed calcium salts in the rations.

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A GOOD LINIMENT.

One of the good old time remedies in nearly every stable in northern Ohio years ago was the following which many horsemen still swear by: sugar of lead 2 ounces; turpentine 1 ounce; oil of vitriol 1 ounce; tincture of arnica 1 ounce; vinegar 2 quarts; whites of 4 eggs. Put all together in jar and shake before using.

Another old time remedy is the following: linseed oil 1 gallon; hemlock oil 1 ounce; sassafras 1 ounce.

An English remedy to prevent horses from gnawing mangers and feed troughs is to give the wood a coat of tar, put on with an old broom, while hot. It is claimed that this is a sure cure for an annoying and destructive habit.

The mysterious actions of a horse which whirls and bites himself savagely are due undoubtedly to the presence of worms in unusual numbers. The rubbing of the tail is another symptom. The spasmodic reappearance of the trouble, and the almost frantic action at times, are probably due to colicky pain induced by worms. A wise course of treatment is to give a pint of raw oil or four drams of aloes in a ball. After it has ceased to act, give a vermifuge. —Farm Journal.

Arrange the quarters of the breeding sows so as to afford plenty of exercise, and encourage it, as the strength and profit of the pigs depend largely upon it.

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PRODUCE MARKET.—Los , Angeles Market San Francisco Market; Deciduous Market, Citrus Market: 494, 495.

Raisins

With the raisin crop short at least 20 per cent and with the output on the whole of excellent quality, raisin men are inquiring as to why such exceedingly low prices obtain. We doubt not lack of organization of growers is at the foundation. If they were largely in one organized body the crop could be so handled as to secure legitimate returns, but with absolutely disorganized forces there seems no probability of a getting together which will result in advantage. We doubt not the packers are directly responsible for the present discouragement for they have maintained a bearish attitude during the whole season until some of the growers have been forced to accept any price offered, and the whole season may pass without a return to profit-bringing prices. Those who are following this great industry have tried various co-operative plans which have repeatedly failed so that now they distrust any suggestion of co-operation. The situation is not desperate, but it is serious enough to make the raisin people willing to give and take until a getting together becomes possible.

Friend of California Gone

Of all the efficient workers in the marketing of California fruits we doubt not Mr. H. D. Foy, representing the California Fruit Growers Exchange at Omaha was one of the best and this state suffers a great loss in his death. Mr. Churchill of the Limoneira Co., at Santa Paula writes:

"It is with keen regret that we advise you of the death, on last Friday, the 28th inst., at Omaha, Neb., of Mr. H. D. Foy who has been the General Agent for Limoneira Company and Nathan W. Blanchard for the past six years.

"Mr. Foy had been in the fruit business about thirty-five years, and no one knew it more thoroughly in its every detail than he. For a long term of years, he was one of the very successful agents of the California Fruit Growers Exchange. During the past few years, he annually sold several hundred cars of oranges and lemons from California, together with an equal number of cars of apples, peaches, pears and cantaloupes from the Colorado fruit district. He undoubtedly conducted the largest independent fruit brokerage business located in the middle west, if not in the entire country."

Sunshine

Perhaps the greatest need in home life on the ranch is more sunshine. At first that may seem the one thing most available, but we have seen so many farm homes which were gloomy, in which but little sunshine was admitted to the house and less to the mental and spiritual life of those who made up the home, that we believe we are justified in making an appeal for the letting in of more sunshine, most especially to the mental life. Bright, cheery, wholesome reading means much to the younger life in the home. It sometimes seems easier to get the other kind for much that is dark and lowering in its tone is found even in some homes. But with the thousands of good books, wholesome magazines and newspapers today we can have the most uplifting reading matter. Of the best of reading matter, especially for the youth, which should include all of us, is the Youths Companion. This weekly magazine takes as its slogan for the coming year, "Sunshine." It states in its prospectus that "for more than eighty years the Youths Companion has been bringing into American households a light entirely its own, a light that has grown in warmth and brilliance with the progress of years." The promise is that the sunshine will be brighter the coming year than ever before and we doubt not the promise will be fulfilled by this old favorite which stays in many homes long after the youths have grown up and become men and women. As a matter of interest in the farm home we may note that Liberty H. Bailey will during the year discuss the size of an acre. The statement is made that the size of an acre depends entirely upon the man who owns it. The reason will be given by Mr. Bailey.

"Chiquenesis"

The above mentioned disease is described more particularly on the poultry page of this issue, and is referred to here not so much because it deals with the poultry people as because the symptoms described are also manifested in all the various departments of agriculture in California. These are more particularly displayed in the literature put forth by boosters who are endeavoring to show the great profits which come from industries in their sections. The walnut or orange tree which under exceptional conditions has given a great return is used as the basis for figuring profits on an acre or on a thousand acres of land. These imaginary profits create false hopes in the mind of the tenderfoot or sometimes the old-time Californian, and often induce him to change his occupation and often to lose his funds. The truth is good enough with regard to our productive industries. Let us stick to it and if possible induce the boosters to do the same.

Eradicate the Pests

This is the best season of the year to take up the work of destroying the ground squirrels, but it is also the season when least work is commonly done, because of the fact that but few crops are now molested as the geatest devastation is in the springtime. But one squirrel killed now is worth a dozen killed in the spring. Succulent feed is now growing so that best success may be secured from use of dry poisoned grains.

Texas Oranges

The Texas Citrus Growers Association with offices at Houston is discussing the matter of adoption of style of boxes for shipping of its Satsumas. The state feels it has a unique position in orange culture and wishes something entirely different for packing Satsumas than is used by either California or Florida. The matter will be decided in the meeting to be held at Houston on the 18th of November.

Farmers Institutes

Imperial Valley institutes will be held under the direction of J. B. Neff, conductor for Southern California, as follows: Calexico, December 12; Heber, December 13; Holtville, December 14; El Centro, December 15; Imperial, December 16; Brawley, December 17.

The meeting of Congress is but a few days away and the Postal Progress League proposes to secure if possible the enactment of a parcels post measure. The Cultivator has mentioned instances in European countries where the parcels post has been of greatest convenience and value. The bill which has already been presented in Congess provides for carrying eleven-pound packages at eight cents per pound and it also provides for the increase of number of delivery systems by permitting mailing of letters or parcels up to four ounces at two cents with charge of one cent for each additional two ounces. In addition, packages up to 25 pounds may be permitted on rural routes with rates varying according to weight, the maximum weight to cost ten cents. This is a good time to imress upon Congressmen the necessity for advancement in our postal department. It has never been self-supporting; it never will be until it enlarges its business so as to take away some of the great profit which express companies have been receiving.

In the matter of co-operation it may be of interest to note that the farmers of this country own and operate sixteen large meat packing plants and that members of the Farmers Union, largely in the South, own and operate in excess of 5,000 manufacturing plants of various kinds. The American Society of Equity also is a large co-operator, owning over 4,000 co-operative manufacturing plants. The Grange is another large co-operator, maintaining many stores and purchasing agencies. Other farmers co-operate in the purchasing of supplies in the Rochedale system of stores. This system has not secured the hold in this country that it has in England. In the matter of doing our own merchandising we Americans are in no way equal to our British brothers.

It is marvellous the different attitude the buyer of fruits manifests toward the man who has strictly fancy, gilt edged fruit and the one who comes with an indifferent or poor article. The attractive fruit he wants and will have; price is a secondary consideration. Consequently the grower has the advantage in the deal and goes home quickly with good money in his pockets. The buyer, if he is up-to-date, knows that the attractive fruit can be sold in double quantity, hence encouragement in the fruit industry is always given where a first class article is produced.

Southern California has for a long time imported great quantities of dairy supplies from the lower San Joaquin Valley, and this will probably continue indefinitely but more recently advancement has been made along these lines. In the Imperial Valley and sections near to the city of Los Angeles great enlargement of the dairy industry has been made. During the past few months over 2000 cows have been added to the herds of Imperial Valley. Other sections in the valleys of the Santa Ana and San Gabriel have felt the impetus of the best prices for dairy supplies in the United States.

New York reports the shipping of Pacific Coast apples to various South American points, all under refrigeration, largely of Jonathans and Newtown Pippins. The farthest south point is Buenos Ayres.

Agricultural News Notes of the Pacific Coast

Northern California

One firm has shipped over 600 tons of hay from the Liveoak section.

Hop growers are holding all the crop not sold hoping to secure the 15 cent price.

The Natomas Company is rushing work on the levees in southeastern Sutter county.

The alfalfa Products Co. of San Francisco has increased its capital from $50,000 to $150,000.

The first car of Butte county oranges for the season was shipped November 1st from Oroville.

The supervisors of San Francisco have decided to prohibit the sale of short-weight packages of butter.

The Petaluma Poultry Association is having a large number of new coops built for the coming show.

Five hundred pairs of Hungarian pheasants have just been received at the state game farm near Haywards.

The short course in horticulture which began at the University Farm at Davis last week will close November 23rd.

Farmers at Yuba City are holding their wheat and barley, not being satisfied with the $1.35 or $1.40 offered for wheat or 85 to 95 cents for barley.

The total shipments of fresh deciduous fruits from Sacramento this season aggregated about 13,500 cars; 100 cars is the present daily shipment.

We note in the Corning Observer that one shipper, Mr. C. S. Jobe, shipped a car of 84 hogs from which he realized a total of nearly $1900, or an average of $22.43.

A company has been formed to reclaim and irrigate 100,000 acres of land near the city of Sacramento. Later the land will be sub-divided in small tracts.

The Gridley Canning Company has acquired a block of land at Gridley and will erect a new cannery and fruit handling establishment ready for next season.

The apple growers association of the Eel River Valley has given especial attention to a finer pack this year and this has resulted in more satisfactory prices.

Bean growers of Biggs, Butte county have harvested the full season's crop and marketed at fair prices.

A new cheese factory has just been established at Yuba City.

The Niles Chamber of Commerce has taken steps for community improvement which it is hoped will give that section the name of the Flower Garden of California.

The Sonoma County Co-operative Poultry Association held its annual meeting at Santa Rosa last week and elected J. B. Jackson President and re-elected C. S. Coy Secretary.

The estimate of the present season's output of hops for California is 69,750 bales. Sonoma county's output is the biggest, being 25,600 bales. The Sacramento Valley will produce about 33,700.

Central California

Visalia is purchasing land for a park.

An effort is being made to secure waterway facilities for Fresno.

Lindsay passed the 100 car mark in shipment of oranges on November 4th.

A new dairy company with $50,000 capital has been incorporated at Fresno.

The Farmers Phone Company at Kerman has chosen directors for the first year.

The farmers institute at Dinuba last week brought out a large attendance.

Fresno county's Fair management finds $500 in the treasury after paying all bills.

Pomona Grange of Tulare county will make a grange exhibit at the coming Citrus Fair.

Some little concern is felt that no soaking rain has been granted over the great central valley.

The Santa Clara County Poultry Association will hold its next annual show in October 1911.

Sanger, Fresno county, is cleaning up on Emperor Grapes and beginning the shipping of Navels.

The Corcoran, Kings county, Board or Trade is discussing the matter of a milk condensing concern.

The work of preparing for the Tulare county Citrus Fair at Visalia is now carried on under high pressure.

The Fresno Chamber of Commerce will make an exhibition California Day at the Chicago Land Exposition.

The contract has been let for a new creamery at Riverdale, Fresno county. It will have daily capacity of 5,000 pounds.

The Apple Annual management at Watsonville has cleaned up accounts of the last show and is now ready for next year's plans.

The San Jose Chamber of Commerce is exhibiting "some pumpkins" in the Ferry Building, San Francisco. One of them weighs 145 pounds.

The Sempervirens Club of San Jose is taking steps to secure additional acreage to the Big Basin Park of Santa Cruz and Santa Clara counties.

MacDonald & Sons' prize winning car of bellflowers, at the Watsonville apple show, was sold October 15 to Lafayette Weinberg, representing Weinberg Bros. of Galesburg, Ill.

The tract of land south of the lake near Corcoran, Kings county, is being homesteaded and some 20 or 30 families have occupied land which heretofore was government land.

At the meeting of Tulare County Pomona Grange recently Visalia Grange won the prize of a handsome silver-mounted gavel for securing the greatest number of new members.

Kings county board of supervisors is making an especial effort to stamp out Texas fever tick and competent inspectors have been appointed to take charge of dipping vats for a thorough round-up.

Southern California

Olive growers are hoping for satisfactory prices.

The Escondido cattlemen report shortage of feeding stock.

Covina, Los Angeles county, held a chrysanthemum fair last week.

Orange county's orange groves promise the biggest output in its history.

Cotton growers of the Imperial Valley have been granted a reduced rate to Galveston.

War of the creamerymen of the Imperial Valley is giving the poducers increased prices.

County Bee Inspector Pleasants of Orange reports almost entire freedom from foul brood.

Bolsa and Wintersburg, Orange county, will ship about 200 cars of celery this season.

Ontario fruit growers have tired of continual fruit stealing and are now arresting the pilferers.

Coachella Valley cotton picking still continues and some very fine fiber has been baled.

San Bernardino has recently completed a large cold storage plant for apples and other fruits.

A few sections of Southern California are shipping Navels as yet and the Valencia output is ended.

The stockholders of the Riverside Land Company re-elected the entire board of directors at the recent annual.

The Antelope Valley claims to have possibilities for the biggest honey production of any section of the state.

Escondido raisin producers are giving attractive pack to this season's raisin output and finding good returns.

Many orchardists are considering the advisability of planting more extensively of the avocado or alligator pear.

The heaviest daily shipment of beets ever received at the Chino Sugar Factory was 55 carloads on one day last week.

The grape growers of Imperial Valley will meet at Brawley at an early date to be addressed by Mr. Geo. C. Hussman of the Department of Agriculture.

Olive pickling establishments are paying $5.00 to $10.00 more per ton than last year. The crop is somewhat short. Some estimate the shortage at 33 1-3 per cent.

The Escondido Citrus Union has just completed a new packing house and has machinery installed for the fall cut of lemons. The output will be about 250 cars.

The horticultural commissioner of San Bernardino county will take charge of the apple orchards in the Oak Glen section and spray trees for San Jose scale.

The Limoneira Lemon Co. at Santa Paula is properly proud of the fact that one car of its lemons recently sold in New York City for $3653, or an average per box of $10.85.

The Coast

Spokane hop growers are making sales at 15 cents.

The Hood River apple crop is practically all harvested.

Five cents apiece is the egg price in Seattle, Washington.

Portland hop market is running close to the 15 cent mark.

A Walla Walla onion grower realized $1750 from one acre of onions.

A cent a pound is the prevailing price on potatoes in Portland market.

A North Yakima apple grower cleared $1872 from one acre of apples.

Hogs are commanding at the Union Stock Yards at Portland, Oregon, $9.60.

Bluestem wheat dropped four cents a bushel in one day at Tacoma last week.

Jap gardeners at Montesano, Washington, harvested this season 525 tons from 75 acres.

Alfalfa seed producers in the Yuma Valley are shipping seed to the Los Angeles markets.

Short courses in agriculture will begin in the Colorado Agricultural College January 9th.

A co-operative creamery is planned and will be in operation at Kimberly, Idaho, January 1st.

A car of Oregon productions has been made up for exhibit purposes in various eastern points.

The queen of the National Apple Show at Spokane was crowned and installed in office on Monday.

The Territorial Fair at Phoenix last week was the most successful of any ever held by the association.

The hop market at Portland is stiffening and is now commanding 15 cents or 2 cents over previous quotations.

The Department of Agriculture of the Hawaiian Islands will institute a suit against the heirs of Kehena II in condemnation of land for forestry purposes.

To prove the keeping quality of apples grown at Moscow, Idaho, exhibits will be made at the National Apple Show in Spokane of fruit which was picked in 1908.

The work of boring the tunnel under the Colorado to carry water to the Arizona side near Yuma will soon be taken up under direction of the reclamation service engineers.

The entire preamble adopted for the new constitution of the state of Arizona is as follows: "We, the people of the state of Arizona, grateful to Almighty God for our liberties, do ordain this constitution."

Farmers near White Salmon, Washington, have discovered a new process of removing stumps. It is called the "charpit" process and consists of stripping bark from the stump, surrounding with fuel and when once completely on fire the whole mass is covered with earth as in the manufacture of charcoal. The fire then eats its way to even the tips of the roots.

Coulson's
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If you were going to erect a large building, you would consult an architect—if you wanted some legal papers drawn up, you would go to a lawyer—because these men have made a special study of their respective professions.

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Hens eat only what they like, but there are many foods they must have, and which must be mixed with their regular food so that they get the desired quantity. The only way the food can be mixed is by improved machinery—that's why you should feed COULSON'S EGG FOOD.

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Practical Poultry Culture

GREEN FOOD.

By Henry Langenschwadt, San Jose.

In those sections of the country where there is cold freezing weather during the winter season, it is a problem to supply green food for chickens during that time. Certainly fresh greens would be most desirable but are out of the question then. Dry cut clover or alfalfa, beets, mangels, etc., are much used.

Grain and meat are concentrated foods. In addition something bulky and at the same time having other elements present is needed. We would not attempt to feed cattle on grain only. Hay is fed abundantly. Our own systems go wrong when given too much rich food. Chickens need green food and lots of it.

The time is about here that those whose hens have their liberty will not need to worry about green food. But it hardly lasts half of the year. There is another time. In the greater part of California we have a dry season when there is little fresh green food to be had unless specially provided for. We should make provision in some way that we have abundant greens, in fact all the year round as well as during the dry season.

How about your hens, or the chicks you are planning to raise next spring? Are you thinking of the green food for them? The time is at hand to prepare for it, so that you have it when needed.

Certainly it would be best if the fowls could range where green food is growing. Comparatively few are able to have such a field for their hens all the year. One can, or should, have a piece of ground large enough to furnish green food for the size flock you have. Now is the time to plow and get in good shape for planting. It will depend upon the nature of the soil, what you intend to plant and how you should cultivate it. If you have water and can irrigate, so much the better. In some localities there are soils of such a nature that enough moistue can be retained when properly worked so that a hardy plant given a good start while there is rain will be well rooted and grow when rain has ceased. In Petaluma district much kale is fed chickens for green food. It flourishes there without irrigating.

We could trace many of the failures to get good results from chickens to the fact that they do not get the green food they should have. How they do relish it! Even the little chicks just a few days out of the shell; they will work like bees at the tender leaves when placed before them till consumed or they cannot possibly eat more. At all ages and from the beginning of the year until the end give your chickens all the green food they care to eat. Then with the grains and meat they are fed, other conditions being good, you will get results. Chicks will grow faster, pullets will lay sooner and a larger egg yield the year round will be had from hens. Also hens will be laying sooner after their molt if they always have had plenty of greens.

We say abundance or plenty of greens; not just a little and then maybe only occasionally, but all they care to eat at all times, to be fed every day. Get the right idea of what we mean by plenty. Not like we happened to see a party feeding a small dish of greens to a large flock of hens. It would hardly have satisfied the appetite of half a dozen hens. Yet these people fed greens to their chickens. Similar instances could be related of many others likewise. Start your chicks with some tender greens a few days after hatched and then keep on feeding greens every day—whatever you may have that is good.

There is another thing you want to remember, and that is that hens fed plentifully on fresh green food will lay larger eggs than those that are not. A party spoke of the large eggs he was getting from his flock. No wonder; they had free range in many acres of alfalfa.

Green food helps to balance the ration so that a hen can assimilate and digest more concentrated foods like grain and meat, putting her in such condition that she can lay eggs. You will find that the good laying hen is a good feeder and likes greens.

There are many different greens which can be fed to chickens. Alfalfa makes a most excellent food. Chickens that can range in a field of it do well. But in most cases it has to be fed. It is best then when cut into short lengths. Cut alfalfa hay is good if the fowls are accustomed to it. They do not seem to relish the fine meal as much. In some parts of the country, clover is used in place of alfalfa.

Kale makes a good fresh green food. It is a hardy plant and is very much used in some sections. Swiss chard and rape are often grown. Beets and mangels can be used. It would be best to have some other greens to change and not use roots exclusively for green food. Sprouted grains are being used by some. A field in which grain is a few inches out of ground is fine for young chicks. Lettuce is very good for chicks just hatched. Many more might be added, but have mentioned a few that are most commonly used.

You will generally observe that successful poultry raisers feed green food and aim that their chickens are never without it. It is essential particularly in warm weather. The manner in which it is relished by the flock will tell that they need it. Always feed plenty of greens.

"CHIQUENESIS."

A writer in the Rural New Yorker gives the following good take-off upon "Chiquenesis" which has to a certain extent been epidemic in California.

There is an incurable mental disease known as paresis, usually running its course to a fatal termination within five years, in which the victim imagines himself fabulously rich, and able to do all sorts of great things. I have invented a word to describe a mild and not necessarily fatal mental condition suffered by many people: chiquenesis. They feverishly dream of hens that lay an egg every day, and of profits in poultry culture that would lay the average mail-order business in the shade. The attack is brought on by the chance account of what some lucky wight has made with a dozen hens somewhere, and one symptom is the tendency to multiply these estimated profits by the number of hens, etc. The disease is

60,000 "Queens" in the Contest

all along the line last year, and the Queen never fell behind. Friends, you will be interested in knowing about the uniform big hatches produced by the

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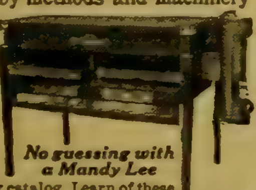

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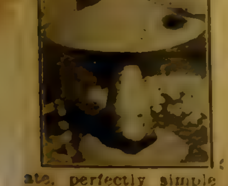

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much aggravated by the advertisements of the various "systems" by means of which so many dollars per square foot can be coaxed out of the soil of a backyard full of chickens in the city; of $10,000 "Peggies," ten-dollar eggs, etc. Chiquenesis as a rule is fatal only to the person of small means and smaller patience and can be cured by a few years of sad experience. The great number of victims is a source of much profit to the dealers in the guff that causes the initial attack, and happy is the victim who can turn his own losses to gain by helping skin others of his class. This is no fling at legitimate poultry business, which is increasing in importance every day, but at the hysterical, overwrought exaggeration of values of poultry which enriches a few and disgusts and impoverishes the many. A years' reading of your conservative and well-balanced paper would be profitable to such victims.

FANNIE WOOD'S POULTRY TALK.

It should be remembered that late-hatched turkeys are not desirable as breeders. Keep the earliest hatched birds for next year's breeders if you want to maintain size and vigor in the flock.

Hens will do well on almost any kind of feed if they have enough of it; but they certainly can not make eggs unless they are supplied with certain necessary elements for egg-making.

Meat scraps put up especially for the hens may be had in almost any market, and it is a very necessary egg-producing feed at this time. Crushed oyster-shells are needed, also.

If it is out of the question for you to furnish house or houses large enough for the fowls you have, the best thing you can do is to cull out and sell until you have on hand only enough to house comfortably.

Nothing ever happens without a cause. One of the things that will surely cause sickness among chickens is crowding 150 fowls into a house large enough for only fifty or at most seventy-five.

Homeless hens, sleeping upon fences and in trees, and shivering in unprotected places during the wintry days are not comfortable; under these conditions, it will take all the food they will eat to keep them alive. The owner will get mighty little profit from the eggs they produce.

An essential to the hen's comfort in cold weather is a floor where no drafts are felt. While you are repairing the chicken house, bank it up well on the outside and if the floor is of earth, make sure to have it higher inside than the ground without.—Farm Journal.

KEEPING POULTRY IN CONFINEMENT.

A subscriber wishes to know if she can keep chickens confined in a lot forty feet square. Chickens can be kept in a very small space if that space is properly tended. Some breeders keep six hens in a portable house three by six feet the year around, and get good returns in eggs and fertility, but it requires more work to keep chickens in cramped quarters than with larger range. The ground must be frequently spaded and kept clean in a small enclosure, the grain buried in the litter to induce exercise, and the coop or colony house kept scrupulously clean. All the average farmer's wife has time to do to the chicken houses is to keep them reasonably clean; the small lot is all right, but keep a plentiful supply of grit and litter in the lot, provide green food each day, and if the ground is left bare, keep it spaded up and sweet-smelling. A poultry yard should be graded to let the water drain away from the house. A damp run is unwholesome.—Wallace's Farmer.

THE VALUE OF UNIFORMITY.

In culling a flock of either chickens or turkeys, try to choose and market birds of nearly the same size and weight at the same time. The butcher does not look at individuals when he estimates what he can pay for the chickens; he is impressed by the character of the lot. If there is but one undersized, roupy, sick-looking bird, he is suspicious of them all and offers a lower price than he would give for a coop of healthy, vigorous-looking birds.

If there are a few scaly-legged hens, don't put them in with young chickens; have the marketing coops made with a partition, and separate young and old, and old roosters. Care in grading means better prices and a welcome at the market.—Wallace's Farmer.

EGGS FOR SHOWING.

A commendable feature of some of the fall shows is the class for fresh eggs. The usual plan seems to be to charge no entry fee for the exhibit, but to take possession of the eggs—a higher entry fee at the price of winter eggs than is charged in most classes. Eggs for showing should be absolutely fresh and full. If they are to be held a few days, pack them in bran, air cell down. Double-yolked eggs are not desired. If a prize is given for the largest eggs, it is with the intention of rewarding the breeder who has hens that habitually lay large eggs, not for the occasional double-yolked egg. The standard of judging eggs gives freshness 30 points, color and evenness of shell 20, size 10, density of white 10, roundness of yolk 10, firmness of chalazae 10, breaking out of shell evenly 10. In candling eggs for freshness, the judge takes into consideration the size of air space.—Wallace's Farmer.

Turkeys meant for exhibition and breeding should not be fattened. Should the gobblers seem overfat, it is well to confine them for a while before the breeding season, feeding sparingly to reduce their weight. A gobbler is in the best breeding condition when he is thin and active. Choose the birds with the longest breast bone for breeders.

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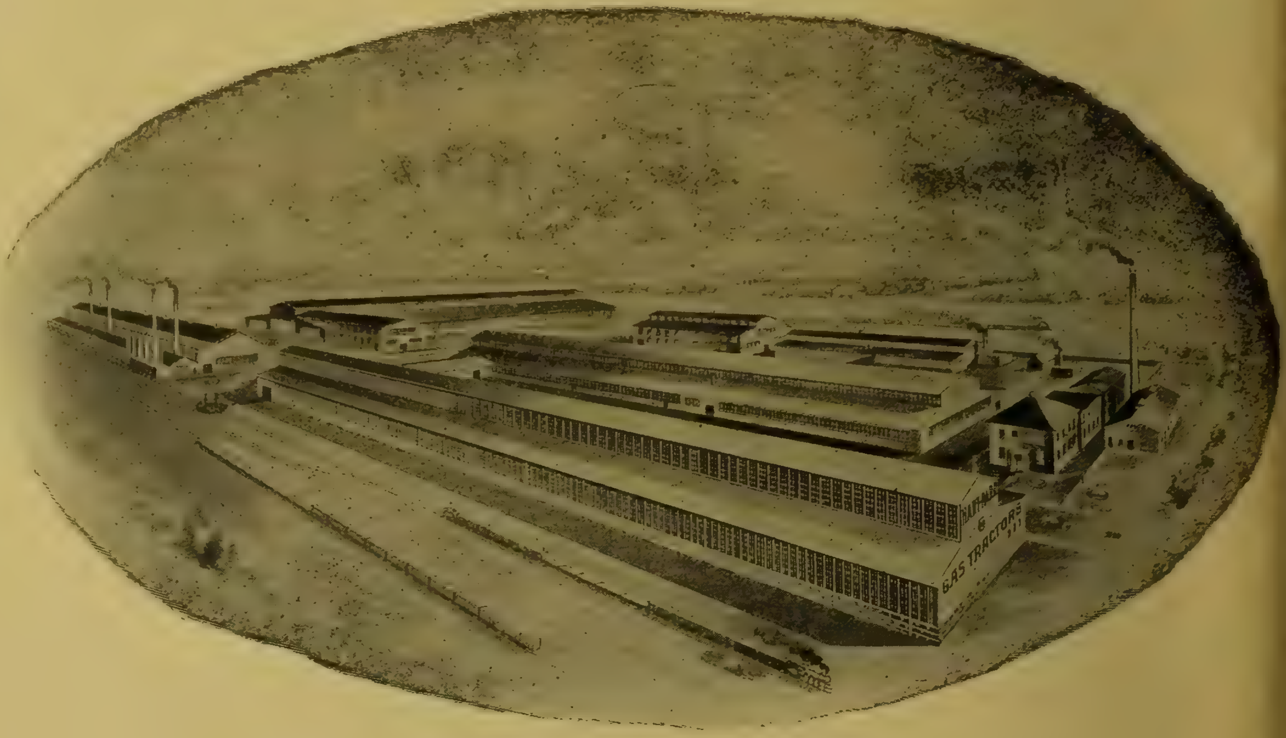

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THE GARDEN

JAPANESE IRIS.

The Japanese iris, when first introduced, consisted of but three sorts, and these at once created a sensation by the magnificence of their blooms, much larger than the older known kinds, and of much richer color. At the present time the varieties are very numerous and of great variety of color, allowing of the possessing of a varied collection. In one of our horticultural papers of recent issue, one of its writers said it was quite a mistake to think these Japanese sorts required a great lot of water, that they flourished very well without it, just as the old type of flags did. The writer has seen them under all conditions, and is sure that with more than the usual water they flourish better than without it. We see flags growing in all collections and situations in gardens, and growing and flowering, too, but even the old style kinds, German Iris, as many call them, do better in deep, rich soil than in that of a shallow nature.

Some years ago the writer says, on Long Island, New York, a plantation of the Japanese Iris in a low piece of ground, so low, in fact, that facilities were there to flood them with water at times, and this was done every few days, and the splendid foliage and dazzling display of flowers will never be forgotten. It is the writer's belief that both the old varieties and the Japanese ones are the better for lots of water. The wild ones of our own country are always in wet places. Give the Japanese ones position where the soil is deep and damp, and flowers will be had, meriting the name for them common with some who admire them, i. e., "the poor man's orchids." The Japanese ones are rather later flowering than other kinds, and as in the older ones were some blooming in April. It is now possible to have a collection from which flowers may be had from early spring until autumn.—Practical Farmer.

BEAUTY OF THE DAY LILY.

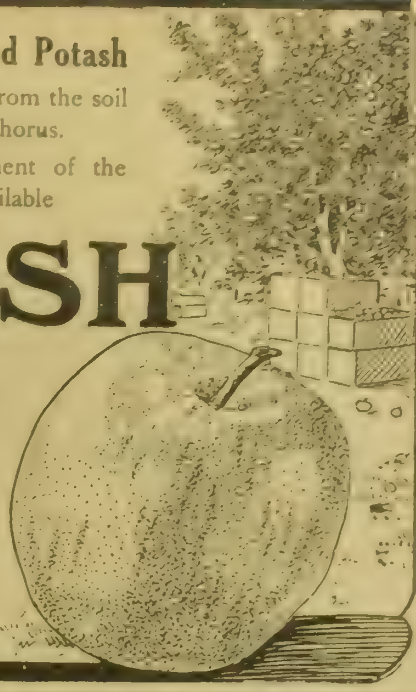
Every one admires the Day Lily (Hemereocallis), which in late years has been greatly improved. Earlier there were only a few sorts to select from, but today we have a good range of colors and a long season of blooming, the result of the hybridist's art.

Those who enjoy lilies in yellow shades in particular will find in this species much enjoyment and success for their efforts. This plant may be grown from seed or divisions of old plants. They are very certain bloomers.

They may be planted at any time and will stand more indifference than most plants. Every plant-lover should have some of the later introductions, as the improvement has been more wonderful in this than in any other plant I know of. I have done much hybridizing on this plant and my work has given exceptional returns and I have secured larger blooms and more beautiful shades than in other flowers.

Below are a few of the best sorts:

Flava, early, deep lemon yellow; Dumorteri, early, brownish yellow; Fulva, the old tawny day lily; Thunbergi, late, lemon yellow, very free; Aureola, pale yellow; Aurantiaca major, deep golden yellow; Disticha, deep golden yellow, double; Kwanso, double fulva.



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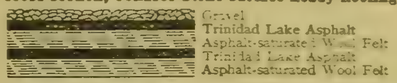

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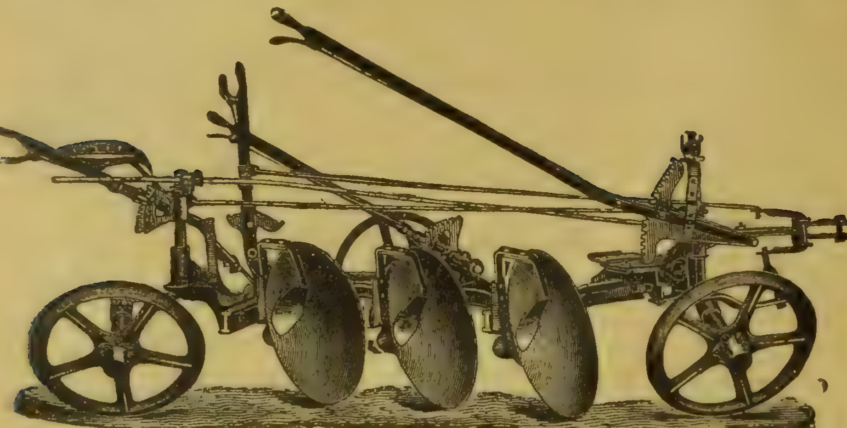

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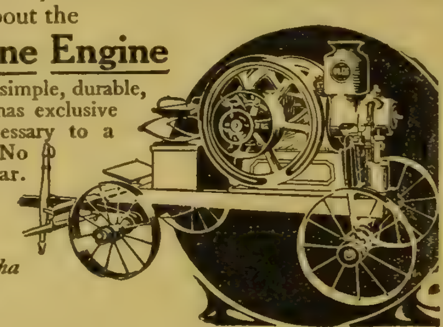

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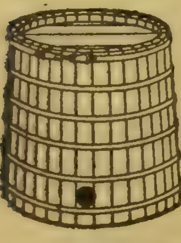

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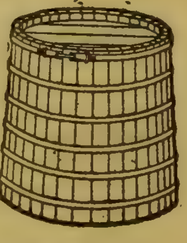

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Irrigation and Forestry

A TIME OF DROUTH.

The loss of cattle and horses during the famine years was one of the greatest calamities that ever visited California. The assessed value of property in Los Angeles County in 1860 was $3,650,330; in 1864, $1,622,370. Over two million dollars of property was swept out of existence, a percentage of loss greater than that of San Francisco by the earthquake and fire in 1906. On the cattle there was no insurance or salvage—the loss was total.

The great drouth began in 1863 and lasted two years. In the winter of 1862-63 the rainfall was less than four inches and in 1863-64 it was little less than a trace. By the fall of 1863 all vegetation had been licked up from the sun-baked plains by the hungry herds, and the cattle were dying of starvation.

As the time for the rainy season approached the rancheros anxiously scanned the heavens for signs and portents of coming storms, but none appeared. The heavens were as brass and the former and the latter rains came not. The winter passed and the hot, dry summer was upon them. Cattle were dying by the hundreds every day. Herds of gaunt skeleton-like forms moved slowly over the plains in search of food. Here and there, singly or in small groups, poor brutes, too weak to move on, stood motionless with drooping heads slowly dying of hunger.

In the long stretch of arid plain between Los Angeles and San Diego there was one oasis of luxuriant green. It was the vineyards of the Anaheim colonists, kept green by irrigation. The two square miles of colony grounds were surrounded by a close-set willow hedge, and the streets were closed by gates. The starving cattle, frenzied by the sight of something green, would gather around the inclosure and make desperate attempts to break through. A mounted guard, armed, patrolled the outside of the barricade, day and night, to protect the vineyards from incursion by the starving herds. There was no relief for the wretched condition. There was no means of shipping the starving cattle out of the country and no feed to ship in. The small amount of feed raised by irrigation was scarce sufficient to keep a few domestic animals alive. Hay sold for $150 a ton and feed barley for $100.—Professor J. M. Quinn, in September Monthly.

GATHERING SEED FOR REFORESTING.

Broadcasting has already been found to give good results in some regions. It was first tried in the Black Hills of South Dakota, with an encouraging outcome. To broadcast an acre of land with yellow pine seed about eight pounds of seed is used One of the most formidable drawbacks to this method is the extent to which the seed may be consumed by birds and rodents. If the season happens to be one in which food for these animals is scarce, the loss is very heavy. The problem of control of animal pests, such as field mice, ground squirrels and gophers, which eat the tree seeds, and also the further problem of preventing the depredations of rabbits, which are altogether too fond of the little trees themselves, whether nursery or field-grown seedlings, is receiving the attention of the Biological Survey experts of the Department of Agriculture.

In some localities the Department has had to purchase seed, but most of that used is gathered by Forest Service men themselves. The cost of gathering has varied for the different regions from thirty-five cents to one dollar a pound. As a rule the seed is collected in the fall months, when most conifers ripen their seed. Parties of three or four men ordinarily work together. Where lumbering is in progress the collectors follow the sawyers and take the cones directly from the felled trees. In standing timber, the task is much more arduous. The men must often climb tall pines and pull the cones from the branches as best they can. Where these are on the extremities and beyond the reach of the hand, pruning shears are used. The cones are dropped to the ground and then gathered into buckets and transferred to sacks, in which they are carried to a central point for further treatment.

The extraction of the seeds is tedious rather than difficult In some cases the cones are spread out upon sheets in the sun, when, after a time, they open and the seeds drop out; in other cases it is necessary to resort to artificial heat. This is applied by placing the cones upon trays with screen bottoms and raising the temperature of the room to the proper degree. The cones open, the winged seeds fall out, and the seed is separated finally from the twigs and dirt by a fanning mill. A good many seeds have been removed from the cone by hand, but this is a sore trial to the fingers of the pickers and an exceedingly slow process.

CENSUS IRRIGATION INVESTIGATION.

The opinions of government and state officials, corporations, and persons expertly informed on the subject of irrigation in the United States will be obtained by Census Director Durand with reference to the number and nature of the questions in the schedules of inquiry, and to the character of the printed instructions for the use of special agents, which have been tentatively prepared for the Census Bureau's impending irrigation investigation.

By the act approved February 25, last, amending the act providing for the taking of the Thirteenth Census, Congress required the Director of the Census to make a special detailed investigation in the United States. The act provides that the information shall show the area irrigated in the arid regions of the United States; whether such work is carried on under federal or state laws; the prices at which irrigated lands, including water rights, are obtainable; the character and value of crops produced on irrigated lands; the amount of water used per acre; and the location of the various irrigation enterprises, together with a description of their methods of construction, their physical conditions, the amount of capital invested, and the like.

Queries and Replies

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Peas Destroyed.

I enclose growth from my peas which are infested with small green worm. It eats the outside of the leaves so that only the fiber remains. What will destroy it? Sulphuring seems to do no good.—Subscriber, Sespe.

Mr. Essig answers: "The samples of the insect larvae infesting pea vines were badly crushed. From the remains it was evident that the injury was caused by a small green larva of a butterfly or moth, the final determination of which cannot be told without adult specimens.

"This makes no difference in the remedy, which should be a poison because the larvae actually devour the foliage. Sulphur, as the correspondent says, can do no good. Therefore spray with lead arsenate mixed as follows:

Lead arsenate	10 lbs.
Water	200 gals

"First mix the lead arsenate in three gallons of water and then add full amount of water. Apply spray while the foliage is dry. There is no doubt but that the above spray will stop the damage immediately."

Lice in Hay.

I find in examining hay which we are storing in barn that it is full of lice very similar to chicken lice but smaller. They are white and very active, from the size of chicken mite to one-eighth inch long. One of the barns was built last year and never has had chickens near it. Will fumigation help? The barns are very large and it will be difficult to make them tight enough to hold gas.—Subscriber, Orange.

Mr. Essig answers: "The louse spoken of is evidently one of the common mites. More than likely it is the common clover mite, Bryobia pratensis, which sometimes is very troublesome in houses and barns. I cannot answer definitely concerning these until I may have specimens. In a very open barn, it is not likely that fumigation would accomplish much with reference to these lice. Salting the hay as it goes into the barn is a good practice to keep out insects. If the barns can be closed up fairly tight, it makes no difference how large they are. Certainly all of the living forms may be killed by using a heavy dosage of hydrocyanic acid gas."

Root Knot.

Is there remedy for root knots which are forming on my walnut trees four years old last spring? I noticed development of this trouble two years ago and now many trees are affected just at the ground and below where the trees swell and the knotty growth is formed.—Subscriber, Greenfield.

This is the ordinary root knot, one of the most perplexing troubles of stone fruit trees. It is practically impossible to control it, though where but few trees in an orchard are affected, some growers have secured fairly good results by chiseling off all the fungous growth, for it is a fungus, cutting until healthy wood is uncovered. Bordeaux or other antiseptic wash is then used to cover the suface of the wound, and if close watch is kept to keep down further recurrence of the trouble the trees may be saved, but if it is comparatively general over the orchard it is probable the ground was infected with the fungus spores when the trees were planted or the trees had the trouble in nursery when purchased. In either case there is little possibility of ever bringing the orchard to best bearing condition. Still worse, the planting of stone fruits in the same ground is not advisable.

Pruning Walnuts.

Do you recommend cutting back branches of grafted walnut trees in five-year-old orchard so as to force some fruit wood growth? At what age should young black walnut trees be grafted for best results?—J. H. H., Gilroy.

We would not head back any five-year-old walnut tree as the tendency is to produce wood instead of fruit spurs after cutting back. If it is necessary to prune the tree try to cut back to another branch that is starting in the right direction. Young black walnut trees can be grafted at any size above three-eighths inch in diameter. We think the most satisfactory tree is made by setting the young native black walnut trees in orchard form when two years old and then grafting when they are large enough to graft at five to six feet above ground. In this way you will have a rough bark trunk that will not sunburn and will not readily be damaged by careless teamsters. Nothing will be lost in production as the top will be formed by the time the tree is old enough to bear fruit.—J. B. N.

Seeding Alfalfa.

Should alfalfa be seeded in dry ground before rain or is it better to wait till the ground is damp?—Subscriber, Fowler.

I do not think it makes much difference if fine garden-like tilth has been secured. The reason why more people succeed in making a good stand of alfalfa in February than in any other month is because they do get the soil easier in a fine mellow condition at that time than earlier in the season.

The rain here, after the soil is well soaked and beginning to dry out, has a slaking action. The particles then slide off more easily and the seed is covered lightly and yet perfectly. The season is sometimes frosty before the first of the year and that has a bad effect on the young plants. I have planted alfalfa every month in the year when conditions were otherwise right and the only months I would avoid are June and July. The trouble then is that the young plants must be watered and yet they do not shade the ground and scale rather badly. If it should happen to be one of those rare seasons when neither month is hot, then the plants would go through. One of the best stands of alfalfa I ever secured was on the dry seeded barley field. I wanted the alfalfa to come quickly and sowed it in August on the dry seeded barley field. It grew like everything and when cut for barley hay it was hard to think that there had been room for any barley, the alfalfa so quickly made a crop of hay.—M. E. S.

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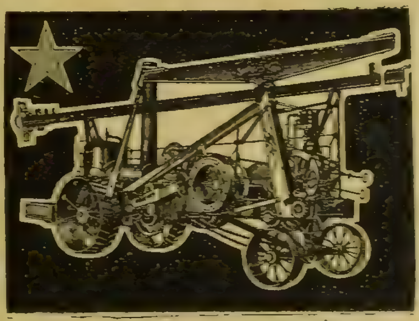

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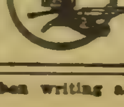

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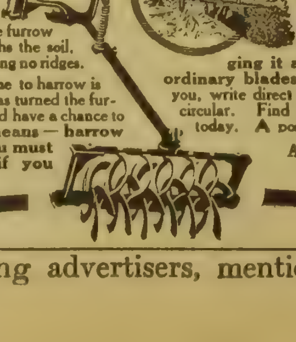
You know that the best time to harrow is immediately after the plow has turned the furrow—before the sun and wind have a chance to dry out the soil. That means—harrow while you plow. But you must get the right harrow if you want best results.



THE cutting blades of The Racine Rotary Harrow Attachment for Plows are curved. They cut throughout their full length—not simply at the point. Positively cannot clog or wind—self-cleaning. Bury the trash and litter well under the soil instead of dragging it around to the surface as do ordinary blades. If your dealer can't supply you, write direct to us for handsomely illustrated circular. Find out about this big labor-saver—today. A postal will do.

ARNOTT & COMPANY
Los Angeles, Cal.

Poison Orange Trees.

How can I get rid of the shoots of poison oranges? The trees are on other property, but shoots are continually coming up in my yard.—Mrs. R., Petaluma.

We do not know what the "poison orange" is, though from reference to shoots perhaps the osage orange is meant, but in any case we would not know how to prevent shoots coming up excepting by continual hoeing or cutting off beneath the surface. If any chemical is used to destroy the plants it will also affect the soil for any other plants which may be desired.

Bermuda for Stock.

I have heard that there are some varieties of Bermuda grass valuable for stock and poultry. Will it hurt stock to pasture on milo and sorghum after frost?—Subscriber, Fresno.

Bermuda is used extensively in the Southern States as a pasture, many farmers cutting it for hay, but alfalfa and other plants are so infinitely superior to it that we would not advise its use in California. We have never heard of stock in this state being injured by pasturing on any of the sorghums, but there is a prevailing belief that a poison is formed—in fact it has been known to occur—but many stock growers take the chances and get the advantages of this wonderful forage plant.

Silver Holly.

I am sending leaves of a desert plant growing near here. Would like to know whether it can be propagated by cuttings or seed and would like its name. The leaves are almost perfectly white and it is a very striking plant. Do not know whether it blooms and forms seed pods or not.—A., Barstow.

We imagine the reproduction of this plant would be attended with many difficulties, but doubtless it should be from the seed. The leaves were submitted to a botanist of wide experience in California plants and he says: "This silver holly is apparently an atriplex or salt bush, one of the most common tribes of plants that are to be found in alkaline soils. It is impossible to give the specific name without a specimen of the fruit. All these plants grow readily from seeds and in a soil slightly alkaline may be sown in the springtime with every prospect of a successful growth."

VETERINARY

Answers in this column by Dr. R. T. Whittlesey, are without charge. For immediate mail answer remit $1.00. In writing questions give full symptoms or particulars of injury of animal.

Teeth Need Attention.

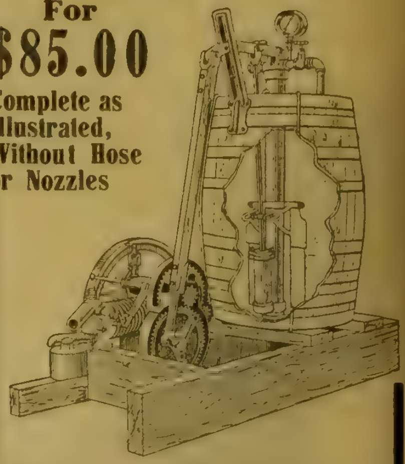
Have mare about 18 years old troubled with water dropping from her mouth while eating, sometimes so badly as to wet the hay. Seems to be healthy in other ways, eats well, but gets thin. Has been this way for two years.—Subscriber, Wildomar.

It is impossible to know very much about the mare at such long range. There may be several teeth lost out or there may be some very long ones cutting her mouth badly. There may be caculi in the salivary duct, or there may be sores in her mouth from eating barley hay. There are many things that will make a horse drool.—R. T. W.

Wart.

My horse has cancer wart near hoof

Power Sprayer
For
$85.00
Complete as Illustrated, Without Hose or Nozzles



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Large air chamber.
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Relief valve and pressure gauge.
Air cooled gasoline engine.
Uses only one pint of gasoline every three hours.
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Correspondence Invited.

W. A. T. STRATTON, Petaluma, Cal.

on foreleg. Can it be removed?—Subscriber, Pomona.

Cut the sore out a little below the level of the skin, or it may be cut level with the skin and burned with a red-hot iron. Then bandage on the sore a pad of cotton saturated with the following solution and change every other day: Formaldehyde, two ounces; water one gallon. The dressing must be kept on the sore all the time or the sore will not heal. It may be necessary to get a leather boot to hold it in place.—R. T. W.

Hardening of Skin.

Have pure-bred Duroc-Jersey boar imported from Kansas fourteen months ago. Was then three months old, in good condition. Afterward discovered on each shoulder place the size of two hands which is hardened or caked under the skin and apparently an inch thick. Seems to be a hardening of the skin tissues and moves freely back and forth. Does not seem to be sore. Boar is not overfat. Is this case of ossification of skin?—Subscriber, Morganhill.

The condition you describe is very peculiar and unusual. There is no probability of its becoming ossified, but is more likely to become a tumor.

The less liniment or medicine you rub on it the better, but if it should become very large it may have to be removed.—R. T. W.

Legal Queries

Edw. L. Payne, attorney, 301-304 Douglas Building, Los Angeles, will answer legal queries in this department.

Immediate mail replies cannot be given except where fee to Mr. Payne is paid. When replies are wished in Cultivator address query to 115½ N. Broadway, Los Angeles.

Reponsibility for Damages.

We rented our farm last December for one year for cash rent and the contract stipulated that the place and everything on it should be returned as renter received. Recently a neighbor set fire to weeds on his place, the fire escaped and burned berry vines and injured peach trees on our place. To whom should we look for damages in this case, the neighbor who caused the loss or the renter under our contract? In addition the renter has not kept his contract as when he rented the place there were about 200 loads of pumpkins and pie melons and about eight acres of alfalfa nearly knee high. There are now no pumpkins or pie melons and the alfalfa is being pastured close to the ground.—Subscriber, Hardwick.

The one who is responsible for the fire and consequent damage is the one who negligently permitted it to do the injuries, in other words the neighbor.

The tenant has a right to reasonable use of the premises, and I should judge that pasturing the alfalfa, if an ordinary method of use and not destructive of the patch, would be a reasonable use of the premises.—E. L. P.

Trespass.

I am told the supreme court has rendered a decision that poultry which has escaped from its owner's gounds may be treated as wild game and killed by anyone.—Subscriber, Hemet.

It seems impossible that a case regarding trespassing poultry could ever reach the supreme court, unless a criminal case, and quite impossible that the supreme court, could decide domestic animals to be wild game when off the owner's premises.—E. L. P.

Divorce Proceedings.

Is a divorce legal when one of the parties was not notified of any proceedings? Can husband sell real estate without wife's signature under this divorce; also can he marry again, and his marriage be legal? What provision can the divorced wife compel him to make for her support? If his divorce is legal under laws of Wisconsin, what part of his real estate can wife get?—B., Los Angeles.

No. the divorce would not be legal unless the defendant was properly notified, either by publication, or personally. The questioner does not say where the real estate is situated; assuming that it is situated in California, it would be possible for the husband to dispose of community real estate without the wife's signature. Of course, his re-marriage would not be legal unless defendant had been properly served in the divorce proceedings with notice. The question of support is left entirely with the discretion of the court upon evidence of the financial standing and condition of the parties, unless the divorce is for adultery or extreme cruelty. In order to know what part of the real estate the wife would get in divorce proceedings, I would have to know the grounds upon which the divorce was sought; the state in which the real estate is situated, and the amount of property owned by each spouse, as well as what part of it was separate and what community property.—E. L. P.

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700 to 1000 on hand daily. Right now is the time to get the best birds at the lowest prices as we wish to close out a few hundred before the fall rains come.

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Our prices are changing and will have to be made in writing on anything you wish in grown chickens. We are hatching and shipping many kinds of BABY CHICKS every week at present. Write today and tell us your wants. Largest Baby Chick Dealers in the World; largest fancy poultry yards in Los Angeles.

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The BEST Car for the Purchaser, or
The BEST Car for the Dealer, Is

The Car that made the Best Record in the 1910 Glidden Tour

FOR THE PURCHASER

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Any new car usually runs smooth—"any new broom usually sweeps clean." What you want to know is: **Will it give lasting service; efficient service; dependable service?** You can't determine this from an hour or two on a boulevard. It takes a test such as the recent Glidden Tour (where every single bolt was subjected to the most **drastic** abuse) to **prove** the things you **ought to know BEFORE** you buy.

FOR THE DEALER

BECAUSE If you are a dealer what better argument can you show a prospective buyer that the car you are trying to sell him will **"stand up"** through thick and thin—rough or smooth—give him the maximum amount of **real dependable** service, than the performance of the 1911 Moline in the recent Glidden Tour.

THE LONG STROKE MOTOR

Affords much **greater power**, especially on low speed; gives greater hill climbing ability; **greater flexibility**; smoother running qualities, **longer life** and a "feel at the wheel" that thrills the driver with a sense of certainty and satisfaction not possible in the short stroke type.

WHAT THE 1911 MOLINE AFFORDS THE BUYER,

The purchaser of the 1911 Moline will get the biggest value in **proved automobile merit** money can buy. He can pay more but he cannot equal the **intrinsic worth** embodied in the 1911 Moline.

This season's model will be built in two styles—**Touring Car and Toy Tonneau**—Five and four passenger, both on same chassis; same specifications. It will have

LARGER ENGINE
LARGER WHEELS
LARGER TIRES
LONGER WHEELBASE
LONGER HOOD
LONGER SPRINGS
MORE POWER
MORE SPEED
MORE ROOM
MORE STYLE

Following are brief specifications. Compare them with others, and you will realize the decided superiority of the 1911 Moline. Then, remember it has proved its merit in the most **critical test** ever imposed on an automobile and won over all competitors.

BRIEF SPECIFICATIONS.

POWER—35 horsepower.
MOTOR—4 cylinder, 4-inch bore, 6-inch stroke, water cooled, thermal circulation.
DRIVE—Shaft drive.
TRANSMISSION—Vertical, selective three speeds forward, one reverse. Full roller bearing.
REAR AXLE—Bevel gear.
FRONT AXLE—I-Beam.
IGNITION—Double independent system.
LUBRICATION — Precision combined with splash system.
CONTROL—Spark and throttle on steering wheel—toe accelerator, muffler cut out.
BRAKES—14-inch double acting.
CLUTCH—Leather faced cone, cork inserts.
WHEELS—12 spoke artillery.
TIRES—3½x36.
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35 H. P. LONG STROKE MOTOR 4 x 6

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We have installed an alfalfa seed-cleaning machine that insures absolutely pure seed, and our stock is selected from only strong and healthy fields.

Germain seeds are not always cheapest in price, but you will surely get a dollar's worth for a dollar and be certain of the quality.

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LOS ANGELES

BUY SEEDS BY NAME

If you were buying apple trees you would rather pay a reasonable price for named varieties, guaranteed true to name by a nurseryman than to buy unnamed trees just because you could get them cheap. Did you ever think of the fact that this same argument applies to seeds? Branded and guaranteed seeds are the safest and in the end the cheapest. There must be quality in every package, for the maker must make good goods or he can't stay in business. When you buy Lilly's Best Seeds, Northern Grown, you buy seeds that are true to name, pure and of high germination.

Don't take chances. Send for catalog. **CHAS. H. LILLY CO., SEATTLE,** for over a decade the leading Seedsmen of the Northwest. No matter where you buy, ask and insist on Lilly's Seeds, and if your dealer does not sell them write to us and we will supply you. Lilly's "Crop" Book is of great interest to farmers. Free

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To Prospective Automobile Buyers:

You naturally wish to purchase the highest grade car you can get for your money, and you naturally want a higher grade car than the dealer can afford to sell you for the amount of money you wish to pay—we will meet your views for a short time.

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We have sold the lease of our garage and have not at present the necessary equipment and room at our store to properly handle automobiles, so we offer you the opportunity to buy a car of higher grade than you ever thought of owning and at a price no higher than is charged for a medium grade car.

Call at Newell Mathews Company, 200 North Los Angeles Street, Los Angeles, Cal., or write us, stating whether you wish to buy a one-seat or two-seat car and we will send you full information or have our salesman call.

Newell Mathews Company

General Agriculture

LOS ANGELES AGRICULTURAL HIGH SCHOOL.

Of the many high schools in the city of Los Angeles its Polytechnic is its pride and the peer of any school of its kind in the world. In common with other cities of this state its educational features have been given the best attention. More recently, in fact within the past two years, its high school located at Gardena, which though still within the city limits is in a purely agricultural section, has been converted into an agricultural school. Small fruits, poultry, and in fact all lines of intensive gardening are given full sway in that locality. When the adding of agricultural courses to the high school was contemplated a tract of land of a dozen or more acres was purchased. Many of the patrons of the school encouraged the departure and a liberal proportion of the attendance took the agricultural course. Regarding the work of the school Mr. F. H. Bolster in charge of the agricultural department last year, has furnished us the following information.

"The school board has spent on other work enough to make $20,000. The school has just completed over have a mile of irrigation pipe at a cost of $1563. It is a high pressure concrete line and one of the finest pieces of work of its kind in Southern California. This line has an adequate number of alfalfa and orchard standpipes and the water supply of the farm, the nurseries, school gardens, and school building has been properly provided for.

"It has a fine team of ranch horses, farm tools of the right kind, and a regular farmer is employed to do the heavy work of the farm. The school farmer lives in the farm house on the school farm.

"This school farm is primarily for the purpose of instruction and experiment. The school should try out new things for the benefit of the community. Let the school which is supported by the community prove the value or the worthlessness of these new ideas. It is better for the school to make a failure of a certain thing than for a number of individuals to do so.

"For example, three acres of alfalfa were put in last year. One acre was common alfalfa, the seed of which cost eighteen cents per pound; one acre Turkestan; and one acre Arabian. The seeds of each of the last two sell for thirty-five cents per pound when they can be obtained, and few farmers will run the risk of putting them in unless they know them to be better than the common kind. One-half of each variety was inoculated and one-half not. They were all put in at the same time under the same conditions and are so arranged and labeled that any man driving past can see for himself how the different kinds compare.

"The school is trying to develop a corn resistant to the corn worm and has planted seed furnished by the government which is already partially resistant. While corn is not in general a paying crop in California its highest possibilities have not been reached. We want the best producer and the one in every way best adapted to the section.

"The fact that any crop is not best adapted to Gardena is no reason why it should not be considered at all. Such a view would imply that the influence of the school would never extend beyond the limits of the community. The boys and girls who get their training here may go out to farm in the great valleys of the West or even into the wheat fields of Canada, so the foundation must be broad. And yet most careful attention should be devoted to those things adapted to the locality.

"Teaching by doing is the motto of the school and yet the pupil who comes here can not spend all his time in farm work. He must have some theory and there are other subjects such as mathematics and history and English which he must study also if the school is to turn out men rather than mere workers. In the work in sloyd the boy will learn how to make a manger or an outbuilding by making it, and at the same time he will be taught how to make certain things for himself as before.

"The garden work is graded. The first year the seeds of all gardens are the same and of easy culture. These are dwarf sweet peas, centaureas, nasturtiums, poppies, zinnias, turnips, lettuce, radishes, beets, beans, carrots, tomatoes, twelve-foot rows of each kind.

The second year along with agricultural botany the garden work is made more difficult. The individual plots are the same size as those of the first year and each pupil raises plants of a different family. Most of the seeds, too, require special culture. This year more than a hundred and thirty different kinds of plants were cultivated on the botany gardens.

"The third year gardens are a grade higher. Each pupil may make of his garden a fertilizer test plot or try different methods of raising a single kind of plant or experiment along any line which meets with the approval of his instructor.

"In the class room elementary agriculture is taught by experiment under the name of General Science. The second year work is Agricultural Botany. Next year Horticulture will be added to our course of study. The plan is to add at least one new course in agriculture a year."

The present instructor in agriculture is Mr. Clayton F. Palmer, who is now just beginning his first year's work.

BETTER AGRICULTURAL METHODS.

A nation which can count a harvest by billions, it might be supposed, would be prone to imagine that it is already practicing good enough agricultural methods.

But we imagine that when the banks are all repaid their loans to farmers to move their crops and profit and loss accounts are closed the per capita net earnings of our great agricultural population will not be wholly satisfied. When, too, the average yield per acre for each of our products over the entire country is compared with the yield in other countries, we are quite sure that convincing proof will be supplied that we as a nation are prodigal and wasteful in the extreme in farming.

To illustrate: The United States produces an average of 88 bushels of potatoes per acre, and the farmer who grows 300 bushels is justified in boasting of his skill in agriculture. Crowded England often raises 1,000 bushels to the acre, and still more crowded Belgium, with over 500 persons to the square mile, can often show 1,600 bushels to the acre. What is here said of potatoes is equally and strikingly true of all other land products. So that our Agricultural Department has sent a commission to Europe to find out how they do it.

The principle upon which European farmers work is that of paying due regard to the cost of production. That is all that intensive farm methods mean—getting the most possible out of an acre of land with the least possible expenditure of money. It is necessary to emphasize the word "money" for there is a system of farming which obtains in all countries that consists in getting the most possible out of an acre with the least possible expenditure of labor, time, investment, or care. If that is farming at all, it is not intensive farming, but the most expensive kind of farming.

Now and then we are told that the American farmer will soon have exhausted all the natural fertility of the land, and that he must come to intensive methods. That warning is uttered as though it were some impending calamity or fearful alternative.

It is not necessary to wait until the fertility of the land is exhausted before adopting intensive methods. All can commence tomorrow morning. And absolutely nothing else can be conceived which will contribute so much and so quickly to the national and individual wealth as will a radical reform in the direction of more scientific and businesslike methods of agriculture and horticulture.—Washington Post.

THE FARMER LAD TOMORROW.

Perhaps no axiom is more steadily overworked than the one that says: "The prosperity of the nation is in the hands of the farmer." Secretary Wilson has repeatedly expressed this view, and early in this year he quoted figures to prove it. He says: "The farm value of all farm products of 1908 reached the most extraordinary total in the nation's history—$7,778,000,000. This is about four times the value of the products of the mines, including precious metals and mineral oils. * * * During the latest ten years the wealth production of the farms of this country has exceeded the fabulous sum of $60,000,000,000."

Taking these figures as a basis, it is easy to see that the American farmer is collectively a mighty factor, possibly the mightiest factor, in the world of finance. Does he know it? If not, why not, when all others are having it dinned into them?

The fact is that the coutry boy has not yet been made aware of himself, of his dormant powers and his special privileges. He has seen that his father, so potent in his collective form is, taken singly, over-worked and under-paid, discriminated against in legislative bodies and snubbed in social ones. He observes that he and his brothers are put to school in poor school houses, under poorly-paid teachers and for short terms, and that the small schooling is so carelessly considered as to tend to fit him for city professions rather than for his career on the farm. What he learns of rural life he learns by the hardest knocks and with the least inspiration from the school room.

The country boy of today, fresh, quick, industrious and observant, is beginning to discover himself. He has traded, dug, hunted, teamed, felt in a hundred ways the pulse of victory, and learned the lessons of failure. He has acquired the conviction that one can excel only by having greater capacity for work and self-training. He has learned that to put personal comfort before duty is to miss the final victory. It will be hard to keep such a boy down.

Heretofore when he has waked up he has gone to the city to express himself, returning generally at the close of life, and wearing his laurels, to the farm. But the young farmer of today does not mean to go to the city to express himself. He means to stay on his own broad acres, carpeted with blue grass and dotted wth well-bred stock of all classes. He means to buy a furnace, bath-room fixtures and an acetylene-gas machine. He means to line the wall of his library with bookshelves and to have the rural free delivery bring him the daily papers, magazines and market reports. He intends to be a factor to be reckoned with in county, state, and national matters.

One other thing he clearly means, and he means it very emphatically: He means to see to it that the county boards of education understand why they were created, and that the school house shall be run for the people by the people. It is not his intention that an offer of some $8,000 for the erection of a modern model consolidated country school shall be turned down, as was done in Jefferson Co., Ky., by the county board of education, when two rich men of Louisville, country-born, wishing to express their sympathy with the farm lad and to help on his inalienable right to an education, offered the board this sum for such a purpose. In a decade or less the young farmer, who is now rubbing his eyes and stretching himself, will reckon with officials of this class. Little isolated country schools, so poorly paid as to be prohibitive of any real teaching talent, will be wiped off the map and in their places will rise large modern consolidated structures equipped for education, for organization and social life, with laboratories and lecture halls and club life; and the new scientific education of the country school will deal with agriculture in its varied phases in most inspiring fashion.—Mrs. Fannie Casseday Duncan in Breeders Gazette.

GOPHERS.

For several years I was bothered with gophers killing my prune trees. and I solved the problem of how to stop their destructive work. While my remedy does not kill them, it keeps them away from the tree. I discovered that gophers did not like sulphur, so dig a trench four feet in diameter around the tree six inches deep, and then take a small bellows and blow flowers of sulphur in it. It takes only about a tablespoonful and the cost and labor comparatively nothing. The trench should be filled with the earth again. The gopher will not go inside this circle of sulphur, and it lasts a long time, as by covering it does not evaporate. I do not see why this method could not be used for any kind of tree where the gophers bother much. Thinking this might benefit some of the numerous subscribers to the Cultivator, I send it in to you.—C. J. B. Moore, Calistoga.

"Flour City"
Gasoline Traction Engines

Made in 30 and 40 H. P.
Gold Medal Winner

We have recently sold six of these splendid engines, and every purchaser is highly pleased. One of them was taken a long distance over mountain roads, successfully hauling a load over grades where it was predicted that no traction engine would be able to go. One of them has been handling a large bean threshing outfit, and the foreman is enthusiastic in its praise. One has been put in the field near Los Angeles pulling plows and harrows and is doing fine work.

The "Flour City" has repeatedly won the first prize—gold medal—in competition with leading engines made in this country and England, for plowing more land and hauling a greater load in a given time, with less fuel and water consumption than any other engine.

These engines have points of superiority that are at once apparent. The extremely high wheels give great traction power and steadiness, while the four-cylinder motors being arranged vertically give an absolutely steady pull on the draw bar. It is extremely easy to handle.

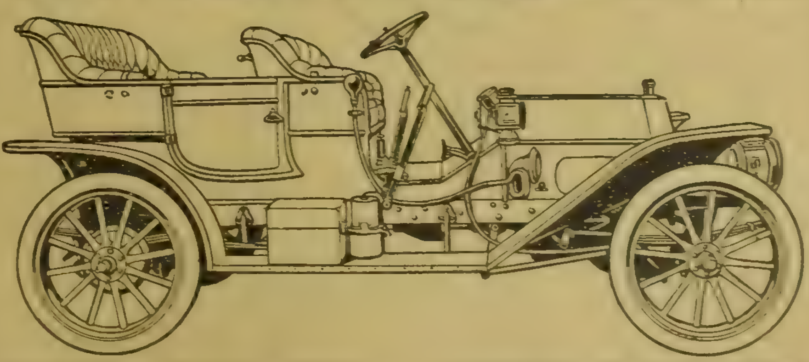
Don't compare the "Flour City" with any other gasoline traction engine you have ever seen. It is in a class by itself — an absolutely reliable, dependable, economical, and powerful traction engine.

Write Us for Description and Prices

We are also dealers in everything for the ranch--John Deere engine gang plows, Deere plows, harrows and cultivators of all styles, Farmer's handy trucks, Feed cutters, alfalfa mills, Grain Drills, Fertilizer Drills, harness, carriages, automobiles and power wagons.

Hawley, King & Co., Los Angeles
228 South Los Angeles Street

DURORCAR The Car for the Farmer



2-Cylinder, 26 H. P., $1500 4-Cylinder, 35 H. P., $1750
Made in Los Angeles and factory open to your inspection. Come and see us.
Both Phones Durocar Mfg. Co., 935 S. Los Angeles St. Los Angeles, Cal.

Money Making Little Liners

In this department we will insert your advertisement under a classified head for 1½ cents per word per issue. No ad accepted for less than 25 cents. Our classified columns are the clearing house for our many thousand readers.

LIVE STOCK.

For Sale—Registered Holstein Bulls; 1 to 2 years old. Some sired by Prince Juliana, brother of former world's record heifer, Juliana De Kol. Dam and granddam, A. R. O. cows. Three record-breakers in some of their pedigrees. M. E. Sherman, Minnewawa Vineyard, Fresno, Calif

Jersey Cows For Sale—Very cheap. One 8½ registered, one 13 years. Good but not regular breeders. $30 and $20, both for $45. Henry H. James, Fair Oaks, Sacramento Co., Cal.

Buy Does Bred to "Andreas Hofer" due February, March. Black Tog. Saanen grade, hornless, wattled, $30; Red doe, fine dairy type, beautiful hare-like ears, $20; and others. R. M. Cartwright, 1353 Palm St., San Luis Obispo, Cal.

Fistula, Poll Evil, Quittor and all running sores cured permanently by a recent discovery of medical science. Write for particulars. Dr. Fred G. Matthews, Veterinary Bacteriologist, 1232 Central Ave., Los Angeles.

Jersey Bull For Sale—Golden Lad Strain. Dam has authenticated butter record. G. B. Reeves, Mountain View, Cal.

Registered Shorthorn Bulls and Poland China Hogs for sale. Best breeding. P H. Murphy, Perkins, Cal.

MISCELLANEOUS.

A Business Opportunity—Store building with glass front. Size of building 20x50, on lot 25x150, in the town of Palermo. Will sell at a bargain. This is a snap for some business man. For particulars address Box 13, Palermo, Butte Co., Cal.

A Bargain—To be disposed of at a sacrifice, well established grain, hay and feed business with a trade of $3000 a month. By right party trade can be doubled. Low rent. Ill health the cause of selling. Call or address A. B. Smith, Bodega Ave., Petaluma, Cal.

Raisins—Producer to consumer, new crop loose Muscatels in 50-lb. boxes, 2 crown, 4c; 3 crown, 4½c; 4 crown, 5c; seedless, 4c. guaranteed. A. H. Dugdale, Etiwanda, Cal.

For Sale—Female Scotch Collie pups; pedigreed stock. Descendants of Wellsbourne Conqueror and Anfield Model. A. C. Wisegarver, San Fernando, Cal.

WANTED.

Wanted—Your work pays the expense to learn a trade that pays $5 a day, in a few months' time; electricity, automobiles plumbing, bricklaying; actual contract jobs; 200 students last year. United Trade School Contracting Company, 647 Pacific Electric Bldg., Los Angeles, Cal.

Help Wanted—We want several good solicitors to solicit for a high class suburban monthly publication. Good profitable employment to the right party. For particulars address Box H, Cultivator Office, Los Angeles.

Wanted—Six hundred feet good second-hand 6-inch galvanized surface irrigation pipe. Also six hundred feet good second-hand 6-inch No. 16 riveted pipe that has been treated with asphaltum. J. E. Youngblood, Lang, Cal.

Wanted—To purchase two Poland China boars. Miles W. Dodd, Murrieta, Cal.

TREES.

If You Have No. 1 Deciduous Fruit Trees, berry vines, or citrus trees, true to name and first-class, we will buy for cash or exchange for No. 1 ornamental stock; have a surplus of Acacias, Pittisporums, Date Palms, Guavas, Camphors, Monterey Pines, Cedar Deodoras, Cornichon Grape Cuttings, Spineless Cactus (Mission). Good Columbus Surrey, fine 20th Century Carbide Gas plant. Get busy. Address H. L. Bauer & Son, 737 S. Spring St., Los Angeles.

Ornamental Eucalyptus—Cleanest and best shade trees for the ranch. Acacias, pines, etc. Large stock. Ballou's Nursery, 728 East Orange Grove Ave., Pasadena, Cal.

Write for Special Price on peach trees and French prune trees, on Myrobolan root. Gridley Colony Nursery, Gridley, Cal.

Marsh Seedless Grapefruit—600 large trees for sale. E. S. Thacher, Nordhoff, Cal

Black Walnut Selected Trees—One and two years old, 2 to 8 feet high. Also seedling peach trees, good stock, and Maliner Keen Horseradish sets. A. P. Henning, Clements, San Joaquin Co., Cal.

For First-Class Valencia and Navel Orange trees and Eureka lemons, see A. G. Snow, Oxnard, Cal

Fine Line of Navels—Valencias and Eureka lemons for delivery spring of 1911. Contract now and get the first choice. The King Citrus Nurseries, Whittier, Cal.

NURSERY STOCK.

Having bought our seed of Luther Burbank, who guaranteed it selected seed, mostly from Giant Crimson Winter Rhubarb, we feel in shape to offer choice Crimson Winter Rhubarb plants for this year's planting at reasonable figures. Write for particulars. B. B. Currier, Sea Bright, Cal.

Rivera Nursery, L. L. Bequette, Prop.—Wholesale and retail dealers in Northern and semi-tropical trees, shrubs, roses, green house plants, etc. Have good stock of apples, peaches, etc. Send for descriptive price list. 625 S. Breed St., Los Angeles, Cal.

Our Descriptive Price List No. 2 contains all novelties exhibited at the Pasadena Flower Show, also other new introductions by Dr. Franceschi; mailed free on application. Montarioso Nursery, Box 1500, Santa Barbara, Cal.

Improved Superlative Red Raspberry Plants —Largest raspberry in cultivation. 100 plants, $5.00. Send for description. William Richard, 438 River St., Santa Cruz, Cal.

RARE PLANTS.

Wild Plant Improvement Gardens, Santa Ana, California. Newton B. Pierce, proprietor. Rare choice ornamentals and new fruits from all lands

For Sale—Fine stock plants of Yellow Major Bonnaffon Chrysanthemums at 50c, per dozen $3.00. Also other varieties. Langley J. Goodman, R. F. D. No. 1, Box 22, Los Angeles, Cal.

FARM LANDS FOR SALE.

Owens Valley Lands—Those who have written us regarding our lands, we wish to advise that the railroad is now completed and that the cost and time of going into the Valley is greatly reduced. Instead of an expense of $30.00, you can make the round trip, spending two days on our land and seeing the country thoroughly, for a total cost of $19.00, which will be refunded to you in the event you purchase. We urge upon the California farmer, who is considering a change of location, not to waste any time in investigating Owens Valley. The possibilities of this wondrous district are far beyond anything in California. It is not necessary for us to use bumper crops of one successful farmer to tell of the wonderful resources of this Valley. From 250 to 500 bushels of potatoes, from 60 to 90 bushels of corn is the general run. The choicest apple districts of Oregon, Washington or Colorado are not one bit superior to Owens Valley, where you can buy today the very best foothill apple land we have, with a perpetual water right, in steel and concrete mains, at $150 per acre, while the same land in the Northern States would cost you $600. There is no experiment about the Owens Valley as an apple country. The trees have been there for 40 years. Expert apple orchardists from the Rogue River, who examined the land in the Owens Valley this summer, contend that their former home never produced Wine Saps and Spitzenburgs equal to what they saw. The climate in Owens Valley is superior to anything in California, outside of the seashore. The hottest day in nine years was 102 deg. This last summer the thermometer ran to 100 deg. on two occasions. The winters get as low as 10 deg. above, but all farmers contend they work in their shirt sleeves all winter, the cold period only being in the early morning. You should write this office and let us send you an assortment of pictures, maps and complete descriptions. Our printed matter will give you a very complete story of all the conditions in the Valley. The man who lost his opportunity in buying Southern California lands when they were $150 an acre has the same opportunity awaiting him in Owens Valley. If you are in the city, do not fail to call at our office and see the exhibit of apples, corn, onions, potatoes and all grains, which you will acknowledge are superior to anything you believed California could raise. Owens Valley Improvement Co. James R. H. Wagner—H. S. Cook, Sales Agens, Room 13, 329 South Hill St., Los Angeles, Cal.

For Sale—A 20-acre farm for $20 cash and $20 a month; possession now; $90 to $125 per acre; your crops pay for the land. Rich, level land for alfalfa, oranges, almonds, grapes, cows, chickens; abundance of ditch water, for irrigation, for $1 an acre a year. Where else can you get this? In Oakdale Colony, near good town and railroad station, climate delightful. T. Wiesendanger, 207 S. Broadway, Los Angeles, Cal.

For Sale—815 acres in San Luis Obispo County. A typical dairy ranch. Plenty of wood, water, irrigable land, buildings, fenced and cross fenced. Orchards, vineyards, oranges, lemons and walnuts do exceedingly well here. Forty acres of land suitable for these. Price $21 per acre. For further particulars apply to Mrs. F. A. Clink, Pozo, Cal.

For Sale—5-acre chicken ranch, ¼ mile from Petaluma, 5-room house, brooder house, windmill and tank, all new. Fine well of water, also fine view of surrounding country. Cow, horse, wagon, and 900 laying hens go with place. Net income last year over $1,000. Price $4,500, if taken before the first of January. Call or address A. B. Smith, Bodega Ave., Petaluma, Cal.

For Sale—At Corona, 12-acre lemon grove. This is a lovely grove, only one mile from town; lots of water, very best of soil; trees about 12 years old. This grove is worth one-third more than price asked. See owner, R. S. Smith, 502 O. T. Johnson Bldg., Los Angeles. Phone Main 2495, Hollywood 3128.

Tulare Co.—$35.00 per acre for short time. 80 acres level alfalfa land, 4½ miles from town and railroad. Unlimited pumping water at 14 ft. Electric power available. Terms, ½ cash, balance 1, 2, and 3 years at 7 per cent. Adjoining land improved. C. H. Biggin, Pixley, Tulare Co., Cal.

Irrigated Land—The famous Gridley Colonies. Improved lands, best homeseekers' proposition in California. Write for particulars. Gridley Land Co., Gridley, Cal.

For Sale—Fresno County, California, 10 acres vineyard, Missions, Sultanas and Emperors. Rich soil, no hardpan or alkali. Riparian water, price $2,500, terms. Statham, Box 78, R. R. 2, Sanger, Cal.

For Sale—El Cajon Grant Land. Virgin soil, 4 miles to railroad, good farm land at $30 to $60 per acre. S. B. Hawley, 1548 D St., San Diego, Cal.

The Best Buys in farm lands in Central California can be had through us. Call or write Sterling Securities Co., Savings & Loan Bldg., Stockton, Cal.

For Sale—In Sutter County, California, choice fruit and alfalfa farms, 10 to 40 acres. E. L. McCune, Yuba City, Cal.

Irrigated Land For Sale, Cheap—In the Lower Rio Grande Valley of South Texas. Ideal climate. Good markets. Large crops. Special inducements to several practical irrigation farmers. Address Manager, American Rio Grande Land & Irrigation Co., Mercedes, Hidalgo County, Texas.

For Sale—240 acres of good land in Mariposa County; 50 acres clear, balance easily cleared; suitable for a hog ranch, grain or apple orchard. Plenty of water; 3 miles of good fences; good buildings. Price $2,200. For further particulars, address C. Gliszinski, Los Angeles, Cal. Gen. Dely.

Apple Orchards—Large and small, in the only apple producing section in California. The greatest section west of Missouri River. Write for booklet. Geo. W. Sill & Co., Watsonville, Cal.

HORTICULTURAL PRINTING.

The Kruckeberg Press, 123 South Los Angeles St., Los Angeles, Cal., makes a specialty of Horticultural Printing and Engraving. Cuts and illustrations of all standard, economic and ornamental plants on hand and subject to the use of patrons without cost. Samples and estimates cheerfully furnished. Remember, we design, write, engrave, bind and print; in brief, do the "whole thing," at no additional expense to the customer. Correspondence a pleasure.

POULTRY.

How to Make Money—Mrs. A. Basley's New Poultry Book is just out. It is without exception the most wonderfully complete manual on the subject of successful poultry management ever written. The secret of how to raise every turkey hatched and the "Basley Formulas," now published for the first time, are worth many times the price of the book. The "Western Poultry Book" is a practical book by a practical woman Price $1.00. Address Mrs. A. Basley, Box 77, Venice, Cal.

Hayes, R. B., Poultry Fancier and Rhode Island Red Specialist—30 breeding pens of Reds, 20 pens miscellaneous varieties. See our birds, they tell their own story, or write for circular. Eggs for sale only. Yards in Arroyo, opposite Ostrich Farm. Box 35, Garvanza Sta., Los Angeles, Cal. Phone East 1631.

LOVELL'S BLACK MINORCAS
California's
Greatest Egg Producers
Pedigreed, trapnested, scientifically bred Free circular. DAVID J. LOVELL, 5720 So Park Ave., Los Angeles, Cal.

Eggs for Hatching—Black Minorcas, Barred Plymouth Rocks, Rhode Island Reds and Buff Orpingtons, $1.00 per 15, $5.00 per 100; day old chicks 15c each. Cockerels $2.50 and $3.50. Stamped envelope for reply or cash with order. (No more pullets). L. W. Neilsen, R. R. 2, Box A1, Petaluma, Cal.

BONNELL'S S. C. BLACK MINORCAS
WIN EVERY TIME.
A few cockerels for sale. C. C. Bonnell State Vice-President American Black Minorca Club, 2919 Brighton Ave., Los Angeles

I Hatch White Rocks Exclusively—Chicks $15 per 100 from a heavy laying strain of prize winners. I am booking orders now for later delivery. Can supply stock from 1 to 10 weeks old. Write for prices. J. Wesley Lord, Inglewood, Cal.

For Sale—14 hens, $1.00 each, and 1 cock $2.00, White Minorcas, good breeding stock. 18 hens, 1 year old, $1.25 each, Winslow's stock R. I. Reds and one cock Harrison strain $2.50. 18 fine White Rock pullets, 3 to 4 months old, 50c each. A. H. Burlingame, Westminster, Cal.

Petaluma Hatchery—Capacity 50,000 eggs. We are booking orders for spring. Write for circular. L. W. Clark, 615 Main St., Petaluma, Cal.

For Sale—White and Buff Wyandottes from best strains. W. C. Parker, 113 Pacific Ave., Santa Cruz, Cal.

Lodi Hatchery—Just hatched, White Leghorn chicks from healthy, heavy laying stock. Booking orders for later delivery. T. C. Hawley, 504 E. Elm St., Lodi, Cal.

Single Comb Brown Leghorn Eggs—$5.00 per hundred, $1.50 single setting. Mrs E. Foran, Box 445, Visalia, Cal.

Poultry Wanted—We pay the highest market price for all the local poultry we can get, no matter how large the quantity; also fresh ranch eggs. We remit immediately Allaway & Layton Co., 607 E. 3d St., Los Angeles, Cal.

Pacific Hatchery—Baby chicks, incubator eggs, and selected thoroughbred poultry, ranch raised. W. W. Clough, Ontario, Cal.

Orland Hatchery—Just hatched White Leghorn Chix. Booking orders for later delivery. P. L. Simpson, Box 13, Orland, Cal.

Baby Chix—1,000 will hatch Dec. 15th. Who wants them? First come, first served. Sussex Poultry Manor, Los Gatos, Cal.

For Sale—Young thoroughbred Bronze turkey toms. Good strong vigorous stock R. B. Thayer, Thermal, Cal.

Baby Chicks and Eggs for Hatching—Orders now taken for January and later delivery of R. I. Reds (Tompkins Strain), White Minorcas and S. C. Black Minorcas (Northrup Strain). C. U. Chamberlin, Los Gatos, Cal.

TURKEYS.

For Sale—Thoroughbred Bronze Turkeys from 38 to 40 lb. Toms, and 15 and 20 lb. Hens. Young Toms $5.00 to $7.00, young hens, $3.50 to $4.00. Pairs and trios not related. Mrs. P. E. Tucker, Tulare, Cal., R. D. 1.

MACHINERY.

For Sale—Second-hand windmills, tanks, engines, farm machinery that will do same work as new at half price. Complete saw mill, including stickers, circular and band saws, blower, planers, 80 H. P. steam outfit. 1400 ft. 2½-inch standard at 9c; 1600 ft. 2-inch at 7c. 8 ft. steel star windmill complete with tank and pump, $58.00. Small distillate tanks, 50 gallons up. Domestic and irrigating tanks, galvanized and redwood, 500 to 10,000 gallons, also 50,000 gallon redwood tank, fine for storage or irrigating. Steam engines with steam pumps; gasoline engines, 2 H. P. Fairbanks engine, geared pump jack, pipe, pump complete $90 F. O. B., also many other sizes. 12 H. P. Fairbanks engine, No. 2 deep well Ames double acting pump jack, 65 ft. casing, rods, and double acting cylinder, 50 ft. belt, all complete and now pumping 20 inches water from 65 ft. well into large reservoir 110 ft. on top of hill. Our price $380 on cars if taken before we have to move it. Complete mounted wood sawing outfit. Gang, disc, road, riding, walking plows, cultivator, feed rack, bone grinder, Fresno, wheel and slip scrapers, wagons, surrey, grading tools, sundries. Demmitt Co., up stairs, 120 N. Main, Los Angeles.

For Sale—21 H. P. gas engine. We got this at a price that enables us to sell cheap. Has been put in A-1 condition. Our guarantee goes with it. Bailie & Brandt Co., 943-945 N. Main St., Los Angeles.

For Sale—One No. 3 Ames pump, 125 ft. of rods, 8 inch cylinder, also one 22 H. P. Fairbanks-Morse engine. All for $1,000.00. 1½ miles north of Olive, ¾ mile south of Richfield. J. H. Gulick, Olive, Cal.

For Sale—We have a 14 H. P. White & Middleton gas engine in perfect order. If you want a bargain, see us about it right away. Machinery Exchange, Main & Bruno Sts., Los Angeles.

For Sale—A good portable drilling rig, good for 800 ft., complete string of tools. About half its value, at $750.00. Address M. H. Magie, 1242 Harvard Blvd., Los Angeles, Cal.

SEED.

Ahuacates, Alligator Pears (Persea Gratissima). Fresh Mexican seeds, none better for stock; $4.50 per 100 seeds; $40.00 per 1000 seeds. Montarioso Nursery, Box 1500, Santa Barbara, Cal

REAL ESTATE WANTED.

Farms Wanted—Don't pay commissions. We find you direct buyer. Write, describing property, naming lowest price. We help buyers locate desirable properties free. American Investment Association, 12 Palace, Minneapolis, Minn.

MEXICAN LAND.

Sonora .... Sinaloa.
Send for free illustrated booklet, "The West Coast, The California of Mexico," and weekly bulletin.
Ben W. McCloskey & Co.,
700 Union Trust Bldg., Los Angeles, Cal.

DAIRY SUPPLIES.

Have You a Cow?—Have you a creamery? Have you a cheese factory? Write us. Everything used in either a dairy, creamery, cheese factory, or for handling milk, cream, butter, or cheese. We are in a position to quote you prices on entire creamery or cheese-making outfits. We make a specialty of only the latest and best sanitary machinery and supplies. Send us a list of what you want and we will quote prices which we feel certain will interest you. O. J. Weber Co., 225-227 East Sixth St., Los Angeles, Cal.

Milk Coolers, Bottles, Caps, brushes, Buhl milk cans, Sharples separators, Babcock testers, veterinary instruments, wood soled boots and shoes, and our celebrated "Prosperity" washing powder. Guy F. Kelsey, 108 E. 8th St., Los Angeles, Cal

Business Notes

SPECIAL FOR WESTERN USE.

A feature of notable importance is the rapidly increasing popularity among the users of wire fencing of the Kokomo Steel Woven Wire Fence, distributed by the California Anchor Fence Co. of Stockton, California. This company is new supplying a large portion of the fencing used by the shrewd buyers and those who can judge a practical fence. The Kokomo Fence, incorporates in its make-up a special class of spring steel wire, which produces a fencing of far superior durability and lasting qualities than is found in the ordinary fencing. It is also being adopted by many of the railroad companies, as well as large land owners. Among those recently furnished, being the electric line from Stockton to Jenny Lind, California. This company issues an illustrated catalogue to enable its patrons to make a selection of fencing, and mail same, together with net factory prices, on receipt of application to the main office, Main and Aurora Sts., Stockton, California.

BLIGHT RESISTING WALNUTS.

Several letters recently appearing in the Cultivator tend to show the increasing interest in the growing of walnuts as a commercial crop in Northern as well as Southern California. In the answer to one correspondent on this question it was stated that no variety had been found that was completely resistant to the blight. What constitutes complete resistance would be hard to say. As a matter of fact, however, the Concord has been growing and bearing nuts for nearly twenty years in Contra Costa county, amongst all other varieties, and has never blighted. The San Jose Mayette has the same record over a period of twelve years in San Jose.

Any who are interested may visit the large orchards of Mr. Ely I. Hutchinson of Concord, and judge for himself, or he may investigate the claims made for the Wiltz or "San Jose" Mayette at the orchard of Rudolph Wiltz, San Jose, or the writer will send samples of these nuts to any who would like to test them.—Leonard Coates, Morganhill.

A COMMUNITY HORSE.

Messrs. J. Crouch and Son, of Sacramento, importers and breeders of thoroughbred horses, have a very commendable plan whereby their horses are sold on shares. Every community can now own a fine Belgian or Percheron stallion. While the prices are too high for individual purchasing the community plan should meet with general favor as it gives the several owners the service privilege, improves the stock and reduces the cost.

Farmers' clubs, stock associations, and others interested in high grade horses should write for full particulars.

MODERN FARM HORSE.

Possibilities of profitable farming have been greatly increased by the introduction of the gasoline traction engine. Low in price, efficient and practical, this improvement, which has been called the "modern farm horse," has increased the capacity of every farm. If that portion of the farm which has been used to support farm stock can be used to increase profits, the farmer's difficulties will be lessened. One of the very best of these traction engines is that manufacturd by the Hart-Parr Co. of Iowa. Mr. O. A Jones will give California inquirers fullest information if he is addressed at 131, 133 North Los Angeles Street Los Angeles.

Household Department

THANKSGIVING.

Hushed as the silence that follows praise
Is the mystic peace of the autumn haze,
That soft and mellow and touched with gold.
Wraps hill and vale in its lustrous fold;
Here and there by the sunshine kiss'd
To violet, amber and amethyst,
Or blown by the breath of the breeze away
From the meadows shorn and the woodlands ray.

We've heard the last of the wild bird's call,
We've watched the loose leaves flutter and fall;
There are empty nests on the naked bough,
There's a dream of snow on the mountain's brow;
The summer's work is over and done.
And the brown fields sleep in the waning sun;
Fruit of the harvest is gathered in.
And grain is heaped both in barn and bin.

And up from the homes that are richly blest,
Dowered with abundance and crowned with rest,
And up from the hearts that in highest mood,
The lowest bow in their gratitude,
Anthems arise to the Giver of all,
Whose love beholds if a sparrow fall—
Whose matchless grace on the earth hath smiled,
Like the parent's look on a cradled child.

From near and far as the household bands,
Cluster and clasp in the best of lands,
That aye in the wash of the silver sea
Hears the lofty music of liberty.
That still where its mighty rivers flow.
Sees peace and learning and progress grow—
From near and far to the God above
Are lifted the strains of a nation's love.

And even from those who must sit apart
In the glimmering twilight of the heart,
Whose hopes have faded, whose dear ones lie
With pale hands crossed 'neath the autumn sky,
Because there is healing after strife,
And a conquering faith in the better life—
From the sad and the worn, as the last leaves fall,
There ascends a psalm to the Lord of all.

—Margaret E. Sangster in Harper's.

THE TIME FOR THANKS.

Gratitude is an old-fashioned word, seldom mentioned in these days. Even the professional doer-of-good, working in the slums, no longer expects it as a reward, and so far from looking for it on the part of our children, the modern attitude toward them seems to be one of apology. They have a right to expect so much more than we are able to give!

Still, when the harvests of the year are all in, the jostle and turmoil of election well over, and a lull has come in the strenuous pressure of a work-a-day world, honoring an old custom we take a day for rejoicing in our various goods and giving thanks. A national Thanksgiving implies a people still alive to the sentiment of the grateful heart.

A time of thanks may well suggest the kind of result that we ought to work for and expect, and a general estimate of our own advance in the path that we have chosen. It is a good time for looking backward and forward and keeping a tally on our own efforts and aims. If we are going steadily in the right direction we may well be thankful for every foot of progress. We have heard a great deal recently in public addresses and appeals of a moral awakening, a quickening of the conscience in governmental and industrial relations, a new sensitiveness in the common mind to questions of right and wrong. In so far as this is a real movement or tendency, it is surely ground for rejoicing for every right-minded person.

The common good is now the shibboleth of both parties, and we are called upon to trust in this or that man as a model of devotion to the best interests of the people. How is this service to the public to be made a practical reality? It can only be through individual, disinterested effort. Every man (and every woman, too) ought to realize that the whole work in life, to be acceptable—acceptable to ourselves, first of all—must be in its actual result beneficient. This rule holds good in all stations and for all kinds of work. The sum total must be something useful, valuable, helpful to the community. A carpenter or a lawyer or a president must make his work felt for good in some real way to be "a desirable citizen." This motive ought to be built into the character of every child. It would help immensely in making a true estimate of the value and attractiveness of the various callings open to the young. It would help to counteract the immense and demoralizing power of money as an object.

The victory of the higher range of aims and motives over the lower is slowly won; the world will not be converted to noble living in a day. The so-called reforms are often merely another device of self-interest, and sweeping novelties in government are urged in the misleading hope of getting something for nothing. The new methods proposed are mostly showy, untried experiments. Not one of them is likely to change the human heart by eradicating greed. Is it not true, rather, that this over-weaning self-interest is at the bottom of much of the industrial unrest and the passionate demand for a more general division of the profits of all large enterprises? Indiscriminate abuse of the rich and exploitation of the virtues of the working man are not in the interest of the common good. A rich man is neither better nor worse than a poor man per se. For both, justice and kindness and common honesty between man and man command confidence and respect. When we put these qualities before our minds as objects that give a new and more serious value to life, we see things in different proportions. Public control of public utilities may come in the future, but if it is a great gain it will be on account of higher standards in individual man. The good of the many must be truly accepted as preferable to the enrichment of the few.

The Thanksgiving festival surely belongs in an especial manner to the farmer and the farmer's family. He is "the man who feeds the world"—

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His Philosophy.—Hank Stubbs—"Ambition ain't hardly wuth while."

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Hank Stubbs—"Waal, ef you are behind the procession you hafter keep bumpin' into somebody, an' ef you git ahead you're liable to git tellerscoped."—Boston Herald.

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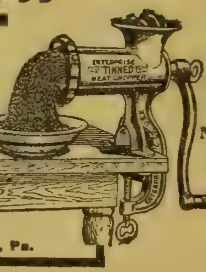

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without him all other undertakings for pleasure or for gain would be cut short indeed. That his work in its large aspect is necessary to mankind and in the interest of all civilization and progress is self-evident. That it brings him close to nature in her beauty and in her power, and that he works in immediate co-operation with her immutable laws, adds an element which means something in the life, even when it is not consciously considered or valued. The living that depends on the sun and rain directly seems to bring us a little nearer to the source of all our supplies. For—

"All the plenty summer pours,
Autumn's rich o'erflowing stores;
Flocks that whiten all the plain;
Yellow sheaves of ripened grain:

* * *

Bounteous source of every joy
Let Thy praise our tongues employ!"

If life were all a matter of earning and spending, all the toil imposed by the instinct of self-preservation, it would be but a sorry gift for which to give thanks. Life itself, with all its wonderful possibilities, the sweetness of the home ties and the hold upon things infinite and divine, must be put before those material things which perish in the using. These are never more than means to an end. The sane, cheerful view of life that helps us to take its joys happily and its sorrows and difficulties hopefully is itself something to be thankful for. If little personal trials and vexations do not disappear, at least they seem smaller when we take a broader view, and think of our lives with reference to our best human opportunities. As a fighting ground and scene of perpetual strife it is, perhaps, a question how far we are raised above the level of wolves and tigers. It is character alone that gives man his preeminence.

It is true now, as it has been from time immemorial, that man can always win his bread from the earth by the toil of his hands. Every man who lives on his own land can find, if he will, that this privilege gives a certain superiority over the claims and demands of commercial interests. We are all mutually dependent, in a very real sense. But this does not lessen the value of that sturdy quality of personal independence by which a man not only thinks for himself, but sets the standard and aim of his whole scheme of life, in accordance with his own estimate of what is best worth while as an object of pursuit. In practical things the farmer has an independence that is also very real. He can afford better than those dependent upon capital for employment to take the highest ground in politics and in morals. He can and should demand in the interest of public service, that the men who hold trusts must be above criticism in their private life, men of high character and unquestioned integrity. To be conscious of unselfish aims means too, to believe in the possibility of unselfishness in others and to have a sense of the need of a loyal support to those carrying great responsibilities. All the social virtues depend on a keen sense of moral obligation. With it, the men who live plainly and work hard are the backbone of the nation.

If we believe in the persistence, through many dangers, of the country which they have made great, it must be because we believe in the persistence of these strong elements of character. For what they are, as well as for what they have received in the year's harvest, the time of the in-gathering may well be a time of profound thanks to the Giver of all Good.—Country Gentleman.

FOR THE THANKSGIVING PARTY.

There is no better form of entertainment at Thanksgiving than an old-fashioned candy-pull and nut party such as was popular with our forefathers and foremothers a century ago.

If possible, there ought to be an open fire-place for the work and for the fun of the evening; but candy may be cooked quite as well, if more prosaically, on a modern kitchen range, and nuts for fortune-telling can be made to burn upon a hot stove-plate.

There should be two kettles, one for the local nut candy, and one for the molasses taffy which is proper for a candy-pull. If not sufficiently cooked, it will not pull. If cooked too much, it hardens on the dish, and is spoiled for genuine taffy.

Then the pulling, which is the event of the evening. The young folks choose partners, a boy and a girl together, and there should be much rivalry as to who will do the work best, and make the prettiest batch of candy.

Telling fortunes with nuts is as old as primitive man. The ordinary method is to take two nuts—hickory or shellbark by preference, with chestnuts as a second choice—and, naming one for an unmarried woman, the other for an unmarried man, place them side by side upon the smooth hearth in front of a hot fire and watch the result of the heat upon them. If the nuts burn steadily together until consumed, the omen is that of a happy marriage for the two people whose names they bear. If, on the contrary, the effect of the fire is to drive the nuts apart, the love affair will never amount to anything.

In setting your Thanksgiving dinner table, always think of the comfort of your guests. Sweep and dust your dining-room right after breakfast and air it well, so that it may not be "stuffy." Look out for the temperature of the room, and see that no guest will be placed in a draft. Don't let the centerpiece or the lamps or the candles, provided you serve the dinner at night, be so high as to obstruct the vision.

As a usual thing, the Thanksgiving dinner is served, according to tradition, in the early afternoon, in which case artificial lighting is not necessary.

Do not overload your table with a multiplicity of small dishes. Have a pretty and artistic centerpiece of fruit or flowers. Fruit for Thanksgiving is especially appropriate. If you have an old-fashioned silver cake-basket, arrange the fruit on that. Have apples, red and green, polished till they shine like mirrors, bronze and ruddy pears; white and purple grapes and golden oranges.

If you have no silver dish or burnished copper tray, such as many housewives are now picking up in the Russian quarters of our large cities, "put them in a pumpkin shell," or one of Hubbard squash. Cut these in halves, scrape out the inside, line with a paper napkin or piece of tinfoil, train a bit of vine or sprays of autumn leaves over the edges, and

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you have a jardiniere of beauty that could scarcely be improved upon.

Here are some suggestions:

Stuffing for the Turkey.

The stuffing for the turkey can be varied to suit the taste and predilections of the family. For those whose memory needs jogging, the following recipes may find appreciation:

Chestnut Stuffing.

For stuffing, use either the large imported chestnuts or the home-grown nut. The latter takes longer to prepare, because it is so much smaller that it is necessary to use three or four times as many as of the large foreign nuts. For a simple stuffing, shell and blanch about a hundred good-sized American chestnuts, then cook for half an hour in water to cover. Drain, mash the nuts and add to them three scant tablespoonfuls of butter, a level teaspoonful of salt and a third of a teaspoonful of pepper. Mix lightly, adding, if desired, a little minced onion and finely-chopped celery, and stuff. This will be sufficient for the average turkey. Reduce proportionately for smaller fowls. A rich dressing can be made by adding to the chestnuts a cupful of finely-chopped veal, chicken or mutton, with parsley and other seasonings if desired.

Walnut or Hickory-Nut Taffy.

Place over the fire in a kettle three pounds of sugar and one pint of water. When the sugar is dissolved, and the syrup comes to a boil, add half a teaspoonful of cream of tartar and cook to the crack degree. Spread in a buttered pan a pound and a half of shelled nuts, hickory or walnuts. Pour the boiling candy over them and, when cool, break in pieces.

Peanut Brittle.

Cover two cupfuls of granulated sugar with water, place in a clean pan over the fire, and stir constantly until quite brown. Add a cupful of chopped nuts, and pour into a buttered pan to cool.

Peanut Brittle, No. 2.

Shell and skin peanuts and strew the bottom of a greased baking-pan thickly with them. Boil together one cupful each of brown sugar and molasses, and add a tablespoonful of vinegar and two of butter. Cook until brittle when dropped in ice water, and pour over the nuts.

N. O. Pecan Pralines.

Add to two and a half cupfuls of water eight cupfuls of sugar and let come to a boil. Cook until it ropes, then add eight cupfuls of chopped pecans and stir until cool. A few drops of vanilla may be added if desired.—New Idea Woman's Magazine.

PERFECT PUMPKIN PIE.

One of the poorest of all dishes is a pumpkin pie which is not what it ought to be, and one of the best is a perfect pie. The trouble is that in making it the ingredients are not rich enough; thick cream and plenty of eggs are really essential to its composition. This recipe is very nice: Get a small pumpkin and cut it up without peeling it; put it into a covered colander and steam till soft, and then remove the peel; put it into a dish in the oven and leave the door open till it is dry, but be careful not to let it grow brown or bake. Press it through the colander and measure; to two and a half cups of pulp add two cups of cream, or very rich milk, one teaspoonful each of salt, butter, cinnamon and ginger, a tablespoonful of molasses, sugar to taste, and, after cooling and beating well, two well-beaten eggs, or the yolks of four. Make a rich pie crust, and line an extra large and deep tin, and leave an edge on top; pour in the pumpkin, bake slowly forty minutes, or a little more, till there is a good brown crust on top; serve very cold, and all around the edge put large spoonfuls of thick whipped cream—a modern idea, but a great improvement on the old-fashioned plan.

ORIGIN AND HISTORY OF THANKSGIVING DAY.

The first day of Thanksgiving on this continent was appointed by Governor Bradley of the Plymouth Colony, in September, 1621, after the first harvest in the New World. The first national Thanksgiving Day in the United States was proclaimed by Washington, at the request of Congress, November 26, 1789, to commemorate the establishment of a form of Government. Madison issued a proclamation in 1815 to commemorate the close of the war with Great Britain. It became an annual event when Abraham Lincoln appointed the last Thursday in November, 1863, as "a day of thanksgiving and praise."

In arranging the table for the Thanksgiving dinner, remember that it is a time of abundance and it will not be so much out of the way if the table does look somewhat crowded. There is nothing makes a prettier and more suggestive center piece than a good sized pumpkin cut into the shape of a basket and then filled with chrysanthemums. These flowers are not necessarily used, only that they are November's own flower. Any greens or flowers look well. The pumpkin filled and overflowing with fruits makes just as desirable an arrangement.

GIVE THANKS.

Give thanks, dear heart; give thanks to everyone
Who meets you with brave word and clasp of hand;
Give thanks for the sweet air, the morning sun,
The plenteousness that fills the pleasant land—
Light in the lover's eyes, souls that can understand,
Oh more than all for love—love that endures,
For all the love, dear heart,—that may be yours,
Give thanks.
Love bounds the whole, from day-dawn to the dream;
The blessed gift of life is Love Supreme.
The human soul secure in this, outranks
All word-creation else; to see and know
The sign will in the deed the purpose show—
Thus wise, dear heart, give thanks.
—E. C. T. in San Francisco Star.

DAINTY TOAST.

Try this for an invalid whose appetite needs coaxing: Toast a slice of bread, dip it into a small quantity of hot water to which has been added a generous piece of butter. Remove from water, pile on top of toast the beaten white of an egg, placing the yolk squarely in the center. Salt slightly and set in a hot oven until the egg is firm but not hard.

"He who thanks but with his lips
Thanks but in part;
The full, the true thanksgiving
Comes from the heart."
—Shedd.

"He who waits for Thanksgiving Day to be thankful, will not be thankful when it comes."

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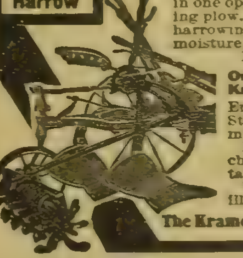

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Leonard Coates Nursery Co. (Inc.)
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San Francisco and Los Angeles Produce Markets

Los Angeles Markets

Butter.

LOS ANGELES, Nov. 16, 1910.

Butter is still at former figures, but the advance in San Francisco over Los Angeles prices has created a still firmer condition. Receipts about 40,000 pounds daily.

Price to trade 2½c in advance of the following Produce Exchange Quotations:

Extras	.35
Firsts	.32½
Cooking	.26

Cheese.

Local	.18
Northern, fresh	18½@19
Oregon Daisy	18½@19
Imported Swiss	.32
Domestic Swiss	22@24

Eggs and Poultry.

Fresh ranch are absolutely cleaned up and each day's receipts will doubtless meet a like reception for some days to come.

Paying price f. o. b.. L. A. is:

Local ranch candled	.52
Case count buying price	.48
Eastern fresh	.38
Eastern storage	.34
Seconds	.32

Dealers pay for live poultry f. o. b. L. A.:

Hens, per lb	17@20
Roosters	8@16
Fryers and Roasters	.22
Broilers	.26
Turkeys	.28
Ducks	.25
Geese	.25
Squabs per doz.	1.50

Live Stock.

The following quotations are f. o. b. Los Angeles, on all stock:

Hogs, 175 to 200 lbs.	9.00
Prime Steers	.5
Heifers	4@4½
Calves, per lb	6½
Sheep, ewes, per head, shorn	5.00
Lambs, per head	3.75@4.25
Wethers, shorn	5.00

Potatoes.

Wholesale prices are:

Highlands	1.25@1.50
Salinas	1.75@2.00
Nevadas	1.60@1.75
Sweets, Yellow, per ctl	1.10@1.25

Onions.

Wholesale quotations:

Australian Browns	1.50@1.75
Yellow Danvers	1.50@1.75
Garlic	.8

Vegetables.

Wholesale quotations:

Artichokes, northern, doz	1.10@1.25
Beets, sack	1.00
Beans, Lima	.4
Beans, green	4½
Beans, wax	4½
Brussels Sprouts	8@10
Bell Peppers, lb	5@6
Green Chilis	5@6
Cucumbers, per box	1.00
Cabbage, per sack	65@75
Celery, crate	2.50
Cauliflower crate	1.75
Carrots, per sack	1.00
Egg Plant, per lb	3@4
Horseradish	12½
Onions, green, per doz bunches	.25
Leeks, per doz	.40
Lettuce, common, crate	1.25
Oysterplant, doz	.40
Okra, lb	.8
Peas, per lb	6½
Parsley, per doz bunches	.35
Parsnips, doz. bunches	.40
Pumpkins lb.	1@2
Radishes, per doz. bunches	15@20
Rhubarb, local, crate	1.25
Rhubarb, northern	1.75
Spearmint doz bunches	30@35
Spinach, per doz	20@25
Hubbard Squash, lb	1½
Summer Squash	.40
Tomatoes, lug	.40
Turnips, sack	1.00

Ctrus Fruits.

Valencias	4.00
Navels	3.00
Grapefruit	2.25@3.75
Lemons	4.00@5.00

Fresh Fruits.

Wholesale prices on the market are:

Alligator Pears	4.00
Apples, Bellflower	85@1.25
Spitzenbergs	1.00@1.50
Jonathans, Cal	1.35@1.65
Greenings	1.00
Pearmains	1.10@1.25
Pippins	1.10@1.25
Pineapples	6½@7½
Casabas, doz	1.50
Figs, box	1.00
Grapes, lug	75@1.50
Tokays	1.25@1.50
Mangoes, lb	10@15
Persimmons, lb	5@6
Pomegranates, lug	1.00
Guavas, basket	4@5
Pears, lb	.5
Bartletts	2.50@3.00
Strawberries	10@12½
Blackberries	10@12
Peaches, Clings, box	50@75
Plums, crate	1.50@1.60
Quinces, lug	1.00
Watermelons, lb	1@2
Christmas Melons	2.25@2.50

Dried Fruits.

Wholesale prices are:

Apricots	12@13
Evap. apples, fy. per lb	8½@9
Figs, pound bricks, box 100	85@2.00
Peaches	6½@8½
Nectarines	.10
Pears	10@12½
Prunes	5@11
Plums	.10

Beans Dried.

Wholesale quotations:

Limas	5.00@5.25
Black eyes	5.50@6.00
Pinks	5.25@5.50
Lady Washington	4.40@4.50
Small white	4.25@4.50
Garvanzas	4.50
Lentils	7.00

Nuts.

Wholesale quotations are:

No. 1 soft shell walnuts	16½@18½
No. 1 H S	.14
No. 2, all kinds	.11

Grafted or budded an advance of 2½c.

Brazil nuts	14@15
Filberts	.14
Almonds, IXL, per lb, new	16½@17½
Pecans, polished	15@16
Peanuts, Eastern	7@7½
Peanuts, Cal	5½@6

Honey.

Wholesale quotations:

Extracted water white	9@9½
Extracted light amber	.8
Comb W. W.	18@20
Light amber	.15
Beeswax	25@30

Hay.

Buying prices f. o. b. cars L. A. are:

Barley hay	10.00@13.00
Wheat hay	10.00@13.00
Tame oat	12.50@14.00
Alfalfa	10.00@11.00

Grain.

Wholesale selling price, f. o. b. Los Angeles:

Wheat, new per ctl	1.75@1.80
Corn	1.60
Popcorn	3.50@4.00
Kaffir corn	1.75
Egyptian corn	1.75
White oats	1.80
Rye	2.00
Seed Barley	1.20

Feed Stuff

Wholesale selling price f. o. b., Los Angeles:

Cracked Corn	1.65
Cracked Wheat	1.90
Shorts	1.80
Bran	1.55
Oil Cake Meal	2.50
Feed Meal	1.70
Rolled Barley	1.15

San Francisco Markets

Butter.

SAN FRANCISCO, Nov. 15, 1910.

Butter has steadily advanced since last quoted prices and now stands at 35½ for extras, with firm condition of market and nearly 50,000 pounds daily receipts.

California extras, per lb	35½
California firsts	.31
California seconds	.29
Storage	30½

Cheese.

California flats, new	13@16½
Cal. Young Amer. fy new	16½@18
Oregon, Fancy	16½

Eggs and Poultry.

Eggs took a strong advance last week, going to 57½ on Thursday, but larger receipts pulled down the quotations till 55 on extras was reached on Friday where they now stand.

Official quotations of the S. F. Wholesale Dairy and Produce Ex. are:

Fresh ranch extras	.55
Firsts	.53
Seconds	.30
Seconds	.30
Hens, per dozen	4.50@10.00
Storage	31½
Fryers, per doz	5.00@5.50
Ducks	6.00@10.00
Broilers	3.00@4.00
Roosters, per doz	5.00@8.50
Geese	2.00@3.00
Pigeons	1.50@2.25
Squabs	2.50@3.00

Live Stock.

San Francisco prices gross weight:

Steers	4@5½
Cows and heifers	3¼@4½
Hogs	5@9⅛
Spring Turkeys	22@25
Calves, per lb.	4½@6
Milk Lambs, Unshorn	6@6¼
Wethers No. 1	4¾
Ewes No. 1	4¼

Potatoes.

Wholesale market quotations:

River White, new box	90@1.10
Salinas Burbanks	1.50@1.65
Oregon Burbanks	1.40@1.50
Sweets, ctl	1.90@2.00

Vegetables.

Wholesale quotations:

Artichokes	25@40
Sweets, ctl	2.00@2.15
Beans, string, per lb	5@6
Beans, Lima, lb	5@7
Beans, wax	4@5
Cucumbers, box	75@85
Celery, per doz	40@50
Chili Peppers, per box	40@50
[illegible] Peppers	6@7
Green Corn, sk	75@1.25
Egg Plant, box	40@50
Lettuce, per crate	4.50@5.00
Okra, box	40@60
Peas per lb	5@6
Summer Squash, box 25 lbs.	1.00@1.50
Rhubarb, box	1.00@1.25
Tomatoes	25@50
Garlic	2½@3

Onions.

Onions sk, Cal	90@1.00

Ctrus Fruits.

Navels, new	1.50@2.75
Valencias	2.50@4.00
Grapefruit	1.50@3.50
Lemons	2.00@6.00
Limes	5.50@6.00
Tangerines	1.00@1.50

Fresh Fruits.

Apples, box	50@85
Apples, Bellflowers	90@1.00
Newtowns	75@1.25
Bananas, Hawaiian	2.00@3.50
Cranberries, Coos Bay	2.50@3.50
Figs, box, single	50@75
Grapes, Isabellas	90@1.15
Huckleberries, lb	8@10
Pears, Bartletts	1.50@2.00
Winter Nelis	1.50@2.00
Persimmons, box	75@85
Pomegranates	50@1.50
Quinces, box	85@1.00
Raspberries, chst	6.00@8.00
Strawberries, chst	5.00@7.00
Watermelons, per doz.	1.50@3.00

Dried Fruits.

Market is quiet and general tone not at all strong.

1910 crop, f. o. b.. carload lots, per lb: Apples, 7@8¼c; Apricots, 10½@13c; do Moorparks, 14c; Peaches, 5¼@7c, with a premium of ⅛@¼c on Muirs; Prunes, Santa Claras, 5½c with ½@¾c premium on 40s; outsides 5¼@5⅜c; Figs, 4¾@6½c for White and 4¼@4½ for Black; Pears, 9¾@13c.

RAISINS—1910 crop: London Layers, in 20-lb. bxs: 6-crown clusters, $2.25@2.50; do, 5-crown, $1.75@2.00; do 4-crown, 1.40@1.50; 3-crown lawers, $1.25@1.30; do, 2-crown, $1.15@1.20. Seeded, per pkg.—Fancy, No. 16 5¾ 6c; Choice, No. 16, 5¼@5½. Loose Muscatels in 50-lb. bxs—Standard, 4-crown, 5½; do 3-crown, 4½@4¾c; do 2-crown, 4@4¼c. Dried Grapes, 3c. Seedless—Muscatels, 3½c; Sultanas, 4½c; Thompsons, 5c.

Nuts.

Walnuts, No. 1 soft shell	.15
Walnuts, No. 1 hard shell	14½
Almonds, '10 N P U	.13
Almonds, '10 Nonp	.15
Almonds, '10 I X L	14@15
Almonds, Peerless	.12
Pecans	14@17
Chestnuts, Cal	6@8

Beans Dried.

Limas	4.70
Pink	4.40
Black eyes	5.50@5.65
Small White	3.70
Large White	3.65
Kidneys	5.50
Garvanzas	3.25
Bayo	4.70
Horse beans	2.00
Red Mexicans	5.25
Cranberry	4.50@4.75

Hops

Hops, coast, 1910	12½@15
Hops, Oregon	10@13½
Hops, 1909	8@10

Honey.

W. W. Comb '10	.15
Dark Comb	12½
Extracted White	.8
Extracted dark	6½
Beeswax, per lb	24@30

Hay.

Arrivals of hay on the San Francisco market for the week have amounted to 4250 tons. The arrivals last Monday morning on the Southern Pacific railroad alone were 127 carloads, which we believe to have been the heaviest arrivals by rail that we have ever received at this time of the year, on any one day.

General trade conditions have not noticeably improved in any direction. The only hay that is at all in demand, or that can be satisfactorily placed are the fancy types of wheat, or of red oat hay.. The bulk of the hay that has been arriving during the past few weeks has been marketed here on a basis of from $10.00 to $11.00 per ton on the tracks here.

The hay association report on hay will be issued in a day or two, and it is expected to show even a larger body of hay on hand than was accounted for on the 1st of November, 1909, at which time there were 258,570 tons. Unless something unexpected develops that cannot now be foreseen, it will be impossible for our markets to consume this vast quantity of hay before next season's crop, and therefore nothing can be seen in the present situation to lead one to reasonably expect any better prices than at this time prevail.

We quote the wholesale prices in round lots on today's market as follows, viz:

Fancy wheat	12.50@13.50
No. 1 wheat or wh and o	10.50@11.50
No. 2 wheat or wh and o	9.00@10.00
Choice tame oat	10.50@11.50
Other tame oat	8.00@9.50
Wild oat	8.00@9.00
Stock hay	5.50@6.50
Alfalfa	9.00@12.10
Straw	40@50

Grain.

Wheat, No. 1	1.37½@1.42½
Barley, fancy	1.01¼@1.02½
Barely, good to choice	98¾@1.00
Barley, poor to fair	92½@97½
Oats, white	1.45@1.55
Rye, new crop	1.47½@1.52½
Alfalfa seed	18@20
Mustard brown	4½
Millet	2¾
Flaxseed	5@5½
Broom corn seed, per ton	23.50

Feed Stuff.

Bran, per ton	29.00@31.00
Feed cornmeal, per ton	36.00@37.00
Cracked corn	35.00@37.00
Ground barley, per ton	22.00@23.00
Rolled oats, per ton	29.00@31.00
Middlings	34.00@36.00
Oil cake, per ton	40.00@41.50
Cocoanut cake, per ton	25.00@26.50
Mixed feed, per ton	24.00@27.00
Shorts	30.00@32.00

Deciduous Market

SACRAMENTO, November 12, 1910.

The following circular of the California Fruit Distributors gives number of cars of deciduous fruit shipped from all points in California for the week (7 days) ending Friday morning, November 11th, 1910:

Grapes:. 171 cars.

Grape movement has continued practically the same for the last seven days as during the preceding week. It is difficult to estimate the quantity still remaining in the state, but it will probably run somewhere from fifty to one hundred carioads.

Weather:

While there have been a few light showers in various places in the state, not enough rain has fallen to interfere with shipping. Another week will practically clean up the crop.

Citrus Market

LOS ANGELES, Nov. 16, 1910.

The temptation to crowd the season has induced the shipping of a lot of green oranges. This has resulted in rejections which have later been picked up by other dealers at low prices. These are not disastrous, but run in the neighborhood of $1.75 and $2.00 f. o. b. California points. It is probable the later holiday shipments will be colored up so as to meet with a better reception. There are a few Valencias in storage which are commanding good prices and ready sales.

Some of the finest lemons ever cut are now being sent. The fall and winter cutting will be rather heavy which has induced a slight shading in prices. $4.00 and $6.00 f. o. b. quotations are common however.

Shipments.

Total shipments of oranges since November 1st, 1910, 52 cars, of lemons 174 cars, making a total of 226 cars citrus fruits. To same date last season 127 cars oranges, 110 cars lemons, 237 cars citrus fruits for season.

NEW YORK, Monday, Nov. 14.—Eight cars of Valencias and three cars of lemons were sold. The market is steady. Cloudy and cool weather prevails.

VALENCIAS—	Avge.
Bouquet, X F, Randolph Frt Co.	$4.45

Tustin Gem, Tustin Packing Co.	4.35
Honest Pack, X C, Tustin Pkg Co)	3.80
Old Oak, Ch, Tustin Packing Co.	3.20
Old Mission, Fy, C C Chapman	8.05
Old Mission, Ch, C C Chapman	7.00
Golden Eagle, Sd, C C Chapman	4.95
Lady Rowena	3.85
Orchard OR, Nat Og Co	4.35
Standard, SD, Nat Og Co	3.55
Planet, S S Ex	5.70
Artesia, A H Ex	4.75
Setter, S H Ex	3.35
Prairie Chicken, A H Ex	2.65
Ideal High, Pro Frt Assn	2.30
Stag, ACG Ex, Azusa	6.20
Pointer, ACG Ex	3.95
Hunter, ACG Ex	2.75
Artesia, A H Ex	4.60
Setter, A H Ex	3.40
Prairie Chicken, A H Ex	2.70

LEMONS—Clown Fy, Sparr Frt Co., $6.15; Lotengo, Fy, Sparr Frt Co, $4.40; Bix X, $3.25; Plain Ends, $4.75; Pioneer, Fy, Pioneer Frt Co, $6.55; Hetchky Ketchy, $5.80; Pride of the West, $5.15; Quail, $6.00.

Oranges—California Navels are selling very well. They are coming more freely and are nice. Valencias are now rather slow. Boxes, late Valencias, choice extras, 96s, $3.25; 126s, $3.50; 150s-216s, $4. Choice 96s, $3; 126s, $3.25; 150s-216s, $3.75. Navels, California, 96s, $2..50@2..75; 126s, $3; smaller sizes, $3.25.

CINCINNATI, Monday, Nov. 14.—Cool. Market advancing on lemons, steady on oranges. One car lemons, three cars Floridas sold.

LEMONS—	Avge.
Selected, fy, ch, N W Blanchard	$4.60
Centauria	4.35
Choice	2.10
Loma, ch, Limoniera Co.	4.70
Lemonspray	3.45

Floridas—Brights, $1.90 to $2.35; Russets, $2.10 to $2.45.

CLEVELAND, Monday, Nov. 14.—One car Valencias and one car lemons sold. Market lower on Valencias, and low on lemons account quality. Cold and snowing.

VALENCIAS—	Avge.
Pet, S A Ex	3.95
El Capitan, S A Ex	3.95
LEMONS—	**Avge.**
Protection, C C Ex, Lemon Cove	$5.00
Standard, C C Ex, Lemon Cove	3.40
Buckeye, C C Ex, Lemon Cove	4.20

PITTSBURG, Monday, Nov. 14.—Six cars sold. Market easier on oranges and lemons. Cold.

Hunter, A C G Ex, Azusa	$2.75
Violet, D M Ex, Monrovia	3.70
Lotengo, fy, Sparr Fruit Co	4.50
Owl, O K Exchange	1.90
Jasmine, D D H Ex, Monrovia	3.00
Crackshot, o.r., parr Fruit Co	3.75
LEMONS—	Avge.
Airship, V C Ex, Fillmore	$5.65
Excellent, S P Ex, Santa Paula	5.40
Oriole, V C Ex, Fillmore	5.20
Sunside, S P Ex, Santa Paual	4.95

PHILADELPHIA, Monday, Nov. 14.—One car Valencias and two cars lemons sold. Market unchanged.

VALENCIAS—	Avge.
Euclid, o.r., Growers' Fruit Co	$3.35
Beauties	2.45
Evergreen	3.30
Flower, Growers' Fruit Co	2.20
LEMONS—	Avge.
Euclid, o.r., Growers' Fruit Co	$6.05
Log Cabin, L F, Escondido	5.65
Flower, Growers' Fruit Co	5.20
Palomar, L F, Escondido	4.75

Twelve cars Floridas sold. $1.10 to $2.75. Average, $2.10. Grapefruit, $2.10 to 3.10. Average, $2.65.

BOSTON, Monday, Nov. 14.—Weather clear and cool. Market easier on oranges. Active on lemons. Four cars sold.

VALENCIAS—	Avge.
Artesia, A H Ex, Prenda	$5.25
Prairie Chicken, A H Ex, Prenda	3.05
Golden Fruit, fy, Red. G Q Assn.	2.70
Setter, A H Ex, Prenda	3.75
Magnolia, ex fy, Worthley ⅞ Str.	3.40
California Beauty	2.35
LEMONS—	Avge.
Watchuma, C C Ex, Lemon Cove	$6.50
Just as Good, C C Ex, Lemon Cove	5.05
Lemon Cove, C C Ex, Lemon Cove	5.30

ST. LOUIS, Monday, Nov. 14.—Weather cold. Market firm. One car Valencias and one car lemons sold. Three cars on track.

VALENCIAS—	Avge.
Searchlight, S S Ex, Orange	$3.35
Sunset, S S Ex, Orange	2.95
LEMONS—	Avge.
Stock Label, A C G, Azusa	$4.25
Green Crown, A C G Ex, Azusa	4.85
El Azar, A C G Ex, Azusa	3.00

NEW YORK, Tuesday, Nov. 15.—

VALENCIAS—	Avge.
Pointer, A C G, Azusa	$5.85
Pet, S A Exchange	4.90
Lincoln, A H, Casa Blanca	3.95
Hunter, A C G Ex Axusa	2.65
Victoria, A H Ex, Casa Blanca	4.15
Navajo, A H Ex, Casa Blanca	2.35
LEMONS—	Avge.
Rey, S T Ex, Fernando	$5.20
Tunnel, S T Ex, Fernando	4.50

BOSTON, Tuesday, Nov. 15.—One car Quail, O K Ex, Upland .... 3.45 sold. Weather cool, clear. Market unchanged.

CHICAGO, Tuesday, Nov. 15.—Lemons remain easy. They are in good supply. Boxes, California choice to fine, $5.50@6.00.

Oranges—Trade is moderate. New California navels are selling very well with fair receipts and they are of good quality. Boxes, late Valencias extra choice 96s, $3.25; 126s, $3.50; 150s, 216s, $4; navels, California 96s, $2.50@2.75; 126s, $3; smaller sizes, $3..25. .

YAQUI VALLEY.

The wonderful agricultural possibilities of Mexico have never been fully appreciated until now that some of its rich valleys are being brought under cultivation. One of the richest of these valleys is the Yaqui Valley on the west coast of Mexico in the state of Sonora, about 260 miles south of the American border. In soil, water and products this section offers wonderful inducements to the homemaker. Other factors claimed as vital are good markets, cheap transportation, one of the finest climates on earth, and all at exceptionally low prices. Land hungry people should learn more of this rich section, which they may do by addressing Charles F. O'Brien, 112 West Sixth street, Los Angeles.

AN ABLE AND UNBIASED OPINION.

Prof. Woodbridge, whom everybody here knows, says 1000 lbs. of Nitrate of Soda per acre annually for a hundred years would add to three feet depth of the soil twenty-six ten thousandths (.0026) of one per cent of Sodium, which no chemist can detect. And besides this, practically all crops remove some soda from the soil.

PROTECTION OF FORESTS FROM FIRE.

The problem of protecting the forests of the country from fires is receiving considerable attention from associations of private owners, associations of lumber companies, state forest wardens, and the national government, and the United State Department of Agriculture has just issued Bulletin 82, Forest Service, relating to the subject. In spite of all that has been done, however, probably 60 per cent of the private forests have no adequate system of protection.

There are three classes of forest fires: Surface fires, which burn the surface layer of leaves, dry grass, brush and small trees; ground fires, burning the deep accumulation of vegetable mold; and crown fires, which accompany surface fires and burn the crowns of the trees.

Surface fires are the most common and may start under ordinarily dry conditions. The severity of the fire, of course, depends largely on the amaunt of accumulated leaves and brush and the strength of the wind. Surface fires kill seedlings and young trees, but in many cases do not kill the larger trees Under some conditions they may kill everything in the area which they cover.

Ground fires occur only when the vegetable mold has become thoroughly dry. They burn slowly, but with intense heat, and are exceedingly difficult to extinguish. They have been known to burn all winter, creeping along under a deep layer of snow. Ground fires usually destroy all trees, killing the tissues of the roots, and the trees die and are blown down.

Crown fires almost invariably accompany surface fires and occur only when the woods are very dry and there is a high wind. Usually all trees are killed. Sometimes, however, where there are a great many hardwoods in mixture with coniferous trees, single trees or groups of trees may escape injury.

As the value of lumber and of the forests increases and the necessity of protecting them from fires as far as possible becomes appreciated, the owners and the different organizations controlling the forests are using every means of securing them against destruction by a thorough patrol system, organized fire-fighting squads with tools and equipment for extinguishing fires located at accessible points, by constantly warring against the careless use of fire, and by every other available means. The number of forest guards on the National Forests is inadequate for the work, in some cases a single man having the responsibility of protecting 100,000 acres, whereas in most places there should be at least one guard for every 10,000 aches. Prussia has a guard for every 1,700

California Cultivator Clubbing Price List

FOR THE SEASON 1910-'11

Prices are Good to Oct. 1, 1911

This magazine price list is prepared annually for the convenience and benefit of Cultivator subscribers. The prices given allow our readers the benefit of the lowest figures possible, in return for which, all we require is that to all orders a year's subscription to the Cultivator (class 18) be added at 90c (regular price $1.00 per year).

This year the pricing of various combinations of magazines is a simple matter; all are listed according to class number and this class number multiplied by 5 gives the cost price.

EXAMPLE.

Class Number.		Regular Price.
20	American Magazine	$1.50
16	Delineator	1.00
37	World's Work	3.00
18	Cultivator	1.00
—		

91X5=$4.55. Club price for all. Amount saved on this club, $1.95.

Periodicals in any combination may be ordered to the same or different addresses. Foreign or Canadian subscriptions are extra on account of added postage and prices must be gotten by correspondence. Subscriptions may be either "new" or "renewals," but it is important that this information be given in each case.

Books—Send us a postal for our list of agricultural books which we supply subscribers and which we recommend as most suited to California conditions.

Don't overlook this special:

The California Cultivator (weekly)
The Rural Californian (monthly) } **Both one year for . . $1.50**

Write names and addresses plainly and address all orders to

The Cultivator Publishing Co.

115-117 N. Broadway Los Angeles, Cal.

The price of the Cultivator and any single magazine may be obtained by adding 90c to the class price of the magazine desired.

Make up your orders from the following, noting that the class numbers multiplied by 5 gives the cost price. Also bear in mind that **all orders must include a year's subscription to the Cultivator (class 18) at 90c.** See example on reverse side of sheet.

Class No.	MISCELLANEOUS	Regular Price.
19	American Sheep Breeder	$1.00
47	Automobile	3.00
8	Boys' World	.50
23	Breeders' Gazette	1.75
27	Cassell's Little Folks	1.50
77	Century Magazine	4.00
65	Country Life in America	4.00
12	Designer	.75
8	Girls' Companion	.50
70	Harper's Weekly	4.00
70	Harper's Magazine	4.00
14	Human Life	1.00
8	Ladies' World	$0.50
9	McCall's Magazine	.50
12	Modern Priscilla	.75
15	National Monthly	1.00
70	North American Review	4.00
47	Outing Magazine	3.00
8	Reliable Poultry Journal	.50
40	Scientific American	3.00
60	Scribner's Magazine	3.00
57	St. Nicholas	3.00
15	Woman Beautiful	1.00
37	World's Work	3.00

CLASS 16.

Amer. Agriculturist	$1.00
Black Cat	1.00
Cooking Club Mag.	1.00
Delineator	1.00
Health	1.00
Housekeeper	1.00
Judge's Library	1.00
Judge Quarterly	1.00
Orange Judd Farmer.	1.00
Pacific Monthly	1.50
Pictorial Review	1.00
Progress Magazine	1.00
Sis Hopkins	1.00
Uncle Remus	1.00
World's Events	1.00

Any two $1.60
Any three $2.40
Any four $3.20
Any one with 1 of class 17 $1.65
Any two with 1 of class 17 $2.45
Any one with 1 of class 20 $1.80
Any one with 1 of class 22 $1.90

CLASS 17.

Amer. Bee Journal	$1.00
American Boy	1.00
Am. Primary Teacher.	1.00
Boston Cooking School Magazine	1.00
Camera Craft	1.00
Children's Magazine	1.00
Cosmopolitan	1.00
Dressmaking at Home	1.00
Electrician and Mechanic	1.00
Health Culture	1.00
Human Life	1.00
Little Folks	1.00
Motor Magazine	1.00
National Sportsman	1.00
Nautilus	1.00
N. Y. Tribune Farmer	1.00

Any two $1.70
Any three $2.55
Any four $3.40
Any one with 1 of class 16 $1.65
Any two with 1 of class 16 $2.50
Any one with 1 of class 20 $1.85
Any one with 1 of class 22 $1.95

CLASS 20.

American Magazine	$1.50
Columbian Magazine	1.50
Good Housekeeping	1.25
Harper's Bazar	1.25
Metropolitan Magazine	1.50
Pearson's Magazine	1.50

Any two $2.00
Any three $3.00
Any two with 1 of class 35 $3.75

You may add to any Club:

All Story Mag.	$1.00	Scrap Book	1.00
Argosy	1.00	Sat. Eve. Post	1.50
Ladies' Home Jr	1.50	Munsey's Mag.	$1.00

CLASS 22.

Ainslee's Magazine	$1.80
American Magazine (after Feb. 25, 1911)	1.50
Amer. Photography	1.50
Baseball Magazine	1.50
Country Gentleman	1.50
Etude	1.50
Everybody's Magazine	1.50
Field and Stream	1.50
Garden Magazine	1.50
Hampton's Magazine	1.50
McClure's Magazine	1.50
Musician	1.50
National Magazine	1.50
Photo Era	1.50
Shield's Magazine	1.25
Short Stories	1.50
Smith's Magazine	1.50
Sunset Magazine	1.50
Taylor Trotwood Mag.	1.50
Teachers' Magazine	1.25
Technical World	1.50
Travel Magazine	1.50
Woman's Home Comp.	1.50
World To-Day	1.50
Young's Magazine	1.50

Any two $2.20
Any three $3.30
Any four $4.40
Any one with 1 of class 35 $3.00
Any two with 1 of class 35 $3.95
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California Cultivator

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Los Angeles November 24, 1910 San Francisco

SUCCESSFUL WHEAT GROWING UNDER DRY FARMING OPERATIONS

The possibilities of dry farming have often been over estimated and efforts along that line have at times resulted in loss, but on the whole great wealth is being added to the country by its practice. The above photo used by courtesy of The Southwest Trail gives an excellent idea of dry land wheat under intelligent handling. The general method of preparing this land is given in Field and Farm as follows:

In preparing to grow winter wheat without irrigation I plow ten inches deep after breaking the land and then I usually have six inches of subsoil. I use horses and disc plows altogether. With a four-gang disc and eight horses I can plow from eight to ten acres a day in a strip half a mile long. The fall plowing is done on the stubble land after the stubble is allowed to grow about two feet high. In the fall it is turned under and in this way gets all of the winter's precipitation, the snow, rain and frost. I leave the rough plowing until the spring and just as soon as it is dry enough to work I put on the disc. I use a different sort of a disc than many of the western farmers. It is known as the six-gang disc. It throws the dirt all one way leaving no space for weeds to grow. The boy with six horses puts the harrows on and continues to harrow lengthwise and crosswise through the season for the purpose of killing seeds and pulverizing the soil, as well as conserving all of the moisture possible. About the first of September each year I put on the leveler and level the earth, the drill in the meantime being run in front and the seed drilled into the ground. We sow wheat at the rate of thirty-five or forty pounds to the acre and let it get the winter's precipitation. In the spring when it is two inches high, I take the harrows and tip the teeth backward at an angle of about thirty degrees, so as not to tear up the soil. This method breaks the crust and pulverizes the soil and if there are weeds it will kill them. We generally harrow both ways as it gives fresh life and vigor to the grain. We then leave it to harvest time. By the methods I have described I average thirty to forty-five of wheat to the acre, fifty to ninety bushels of barley, three to three and one-half tons of millet and have plenty of good pasture for the cattle.

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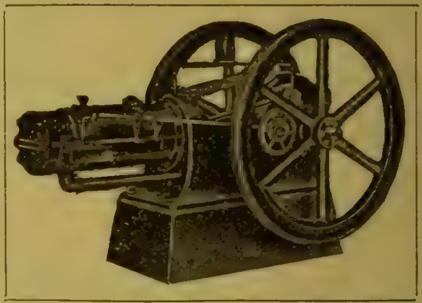

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California Cultivator

Vol. XXXV—No. 21 Los Angeles, California, Thursday, November 24, 1910 Subscription $1 a Year

Some Hardy Flowers for the Southwestern Gardens

Flowers and Shrubs Which Will Do Well Under Conditions in Arizona and Other Southwestern Territory. By J. J. Thornber, Agricultural Experiment Station, University of Arizona, Tucson.

It is the common lot of home-builders in new countries to meet with failure in their earlier attempts to grow the less hardy and less enduring plants, including flowers and similar ornamentals. This has been particularly true in the Southwest where climatic factors are a severe test for any but native species or hardy introduced ones. After no little experience and observation in the growing of such plants, the writer has prepared this article in the hope that it may be of some help to those desiring to beautify their surroundings, if this may be done without too great an outlay of time and money. It is, of course, to be granted that winning bread and providing shelter is always of first importance to a family, but after these and other necessary things are assured there comes a longing on the part of most of us for more pleasant environments, including the association of flowers, shrubs, and trees. The lack of these very things or the failure to realize them with reasonable effort, is often responsible for discontentment and dissatisfaction among rural dwellers in new communities, and their consequent removal to other untried lands to begin over again. How often has the farmer's wife amidst her solitude and too often desolate surroundings complained of the difficulty of getting a few plants to grow about the home!

In presenting what follows, it is with the assurance that the plants suggested are hardy, and ordinarily can be depended upon, except in instances noted, to grow with moderate care. Many of them are flowers that grew in the gardens of our forefathers and hence are hardy throughout the country being as valuable for the East and North as for the Southwest. Next to the picture of desolation and indifference portrayed by a home with no attempts at ornamental planting of any kind, is one set with a lot of half-dead, chlorotic plants keenly depicting failure and disappointment. Such plants speak poorly for a country and are a source of constant annoyance to the planter. Better a group of homely, rugged native varieties than a collection of sickly, sun-scorched roses, or a bed of old-fashioned zinnias to one of lilies, if the roses and lilies cannot be grown to moderate perfection without undue effort.

Climate versus Plant Varieties.

A lack of appreciation of the differences between our winter and spring, and our summer growing seasons is responsible for the failure of many plants, particularly flowers, to make any growth whatever when planted. Too often we are sowing sweet peas and poppy seeds when we should be planting petunias and zinnias. Some of us endeavor to grow the same varieties of flowers here in the summer season that we did in the states farther north and east, and in this we almost invariably fail. The exerienced Southwestern truck gardener, with his acre of rich valley soil, knows too well not to waste time trying to grow such vegetables as onions, peas, and spinach during our extreme summer heat, though these conditions are perfect for beans, squashes and sweet potatoes. The current statement of some years ago that the city-bred man is as much at home on a ranch in the Southwest as the experienced Eastern farmer contains some truth and is only another way of saying the same thing.

In a previous publication the writer pointed out that species growing remarkably well during our winter and spring months are seldom able to make any headway in the summer season. In fact such plants usually die at the beginning of the hot, dry fore-summer, or at least cease growth and production of flowers and seeds, even with moderate irrigation. Witness for example, the fruitless attempts at our lower altitudes to grow sweet peas, ten-weeks stock, candytuft, crimson flax, or even California poppies in the summer. And the reverse is likewise true for such varieties as flourish during the hot weather. Seldom do they make any growth worthy of note in the winter season, and usually they are not at all in evidence, having been cut down by the frosts of late fall.

Winter and Spring Bloomers.

As concerns annual flowers for late winter and spring blossoming it is true in general that varieties listed in seed catalogues as "hardy annuals" are the ones most certain to thrive during our cooler temperatures. This group is made up largely of such well-known plants as mignonette, candytuft, sweet alyssum, sweet peas, sweet sultan, ten-weeks stock, snap dragon, pot marigold, common parsley, annual or rocket larkspur, and corn and opium poppies. To these may be added also the equally hardy Arctotis grandis, crimson flax, perennial flax, blue lupine, annual phlox, Mexican evening primrose California poppy, and the gaillardias, the last six of which are indigenous to the Southwest. Along with these should be planted for spring and early summer flowering the biennial foxglove, Canterbury bells, and the ever-present and hardy hollyhock.

Seeds of the above plants may be sown any time in September or early October in ordinary, well-prepared garden soil. When sown in September the young plants grow to some size by late fall, and are less subject to injury from birds and grasshoppers. The plants require only moderate irrigation during much of their growing season by virtue of moderate temperatures, and of the winter rainfall which at times is sufficient to supplement a considerable part of the watering. With a few exceptions including the biennial species, the growth of these varieties is at an end by the middle of May when the hot weather sets in, after which most of us have little inclination to look after beds of flowers, while still others seek cooler climates. These winter and spring growing plants are accordingly well suited to our country and with the perennial species to be noted next should come to be widely grown. It is to them that we must look for cut flowers and diversity of color during our festive winter seasons when the landscapes in other countries are bleak and sere. During their season of growth they may be seen in profusion on the University campus at Tucson, and the Capitol grounds at Phoenix, where no little attention has been given to them.

In addition to Canterbury bells, foxgloves, hollyocks, and gaillardias, certain of the annuals, as phlox and larkspur, will continue with cultivation and frequent watering, to blossom well into the sumer season. No other of our winter growing plants supply so many flowers for cutting, nor so wide a range of color as the sweet pea. They should be given deep, rich soil and moderate irrigation, the latter in particular, after the first flower buds appear. Excellent results follow planting them in trenches a few inches below the level of the ground, and gradually filling these in with soil and rotted material as the plants get some size. This insures deep rooting during the dry spring, with the result that the flowers continue of good quality for a much longer time.

There are a few perennial species blossoming in winter and early spring that should be planted at the same time as the annual flowers just noted. Of these the well-known sweet or English violet is one of the most satisfactory. Besides blossoming freely during the winter, with moderate watering it remains green throughout the year, and even if allowed to go unirrigated two or three months in the summer a fresh growth starts up in the early fall, from the underground stems. Violets should be re-set about every second year to keep the roots from becoming too matted, and also to renew the soil. The usual custom of planting winter growing plants like the sweet violet in the springtime is not good, as such newly-set plants require constant watering throughout the summer to keep them from dying. Far better it is to set them in the fall just as growth begins naturally. This is a safe rule to follow with all plants.

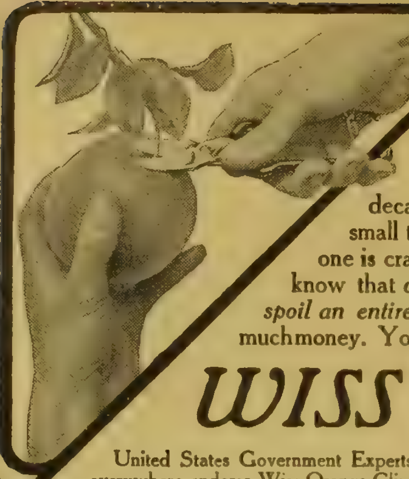
The various kinds of Narcissus furnish excellent cut flowers for winter and early spring, though they are often shy bloomers. The more common of these are the Chinese sacred lily, poets' narcissus, trumpet narcissus, comon daffodil, and jonquils, though several others of the group do equally well. September and October are also good months to set out such other bulbous plants as the star of Bethlehem, Roman hyacinths, the several varieties of oxalis, and the Asiatic ranunculus. The latter furnishes an abundance of bright-colored, daisy-like flowers in the spring, being considerably grown in the Salt River Valley. Irises represent another group of valuable spring bloomers. The German iris is planted more than any other, and always with good results. A clump of these plants is a feature in any spring landscape. Though remarkably tolerant to arid conditions the German iris does best in deep soil with an abundance of moisture. A somewhat similar though less showy plant, is the sweet flag iris (Iris pseudacorus), quite common about Phoenix. The little Spanish iris (Iris xiphium) also does well here. Bulbous species like the above, and perennials in general need little attention when once established, but continue flowering in season year after year. For this reason they are more economical in the long run than annuals which need re-sowing, though the latter make a quick showing which is always desirable on new grounds.

Carnations, verbenas, and periwinkle or trailing myrtle, likewise are best planted in the early fall. Carnations in particular, should be given a moderately well enriched, sandy loam. These and verbenas are nearly continuous bloomers with us, while the varieties of periwinkle are evergreen trailers, with blue bell-shaped flowers appearing n the spring. Periwinkle is a general purpose plant, growing almost wherever planted, and thriving in both poor and rich soil, and in shade and sunlight.

Varieties for Summer and Fall Blooming.

On account of heat and aridity, only the hardiest garden plants will grow through the summer season with any degree of success, and even these require frequent or moderate irrigation. Of the annuals the following have been found to be the most successful: zinnias; globe amaranth; prince's feather; cockscomb; hyacinth and scarlet runner beans; golden feather; summer chrysanthemums; cosmos; China asters; four-o'clock or marvel of Peru; castor beans; garden sunflower; balsam apple (Momordica); cypress vine; and the various morning glories including scarlet, blue and purple flowered varieties, also Japanese morning glory and the moon

(Continued on Page 506)



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Citrus and Tropical Fruits

MELANOSE.

There has been much complaint during the present summer of the presence of Melanose on citrus fruits. The most of these complaints have come from the northern half of the cirtus belt, where the disease seems to be the most prevalent. One grower writes: "There are thousands of oranges in the groves hereabouts affected." The question of all is: What is it and what is the treatment?

General Appearance.

Melanose is a disease that starts only on the young leaves, stems and fruit. As the tissue of these parts grows older, it becomes immune to attack. The individual marks, or spots, caused by the disease, start as sunken points, which grow larger and more evident as the tissue grows older. They may reach a diameter as great as 1-16 of an inch. Frequently these marks are so plentiful that as they grow they run together, forming a mass or area in which the individuality of the marks will be lost.

The individual markings, and sometimes the areas, become arranged in circles, or parts of a circle. This is characteristic of Melanose.

In many cases, particularly if the fruit hangs so that water drips onto it from a leaf or branch above, the location of the areas will resemble withertip tearstaining.

Description of the Marks.

The markings of the Melanose in its mature condition are wax-like and reddish brown in color. They somewhat resemble a drop of melted sugar burned to a reddish brown color. They are slightly raised above the surrounding surface.

Effect Upon the Plant.

Leaves, stem and fruit are affected by the Melanose. Where markings are very plentiful, the leaf may be stunted and deformed. Such leaves will be more or less bleached.

Upon the stems and fruits the markings more frequently run together, forming areas. Where the disease is severe the stems will be more or less completely covered with the markings. Young terminal twigs, when severely affected, will die and dry up, appearing very much the same as the stained terminal branches in dieback.

The fruit, when severely affected at an early age, will be stunted. In most cases it will grow to a normal size, but will have the markings more or less completely scattered over its surface. The markings are not attached bodies like a scale, but are a part of the tissue of the fruit itself. Therefore they can not be removed and the fruit is worthless for shipment.

The development of areas is greatest on the fruit. Very often they are large, cake-like, and cracked in lines like dried mud.

Melanose and Dieback.

It frequently happens that Melanose and Dieback are confused. In some cases it requires very close observation to distinguish between the two. The following are some of the points of difference between the two diseases:

Melanose.

1. The markings of the Melanose on the leaves, stems and fruits are the same.

2. Its markings are very superficial and in most cases they are slightly raised above the surrounding tissue.

3. The markings are very small, individual, and scattered like pepper over the affected surface. Often areas of the markings will interlace, surrounding little fields of green.

4. The markings are sometimes arranged in circles or parts of circles.

5. No gum is formed in the angles of the segments and surrounding the seed in the fruit.

Dieback.

1. The symptoms of the dieback on the stems, leaves and fruit are varied. Any staining of the leaves that would be at all comparable to melanose markings very seldom occurs.

2. The dieback staining that occurs on the fruit and stems is almost never raised, and extends to more or less depth in the tissue.

3. Dieback stains nearly always occur in areas that are more or less continuous.

4. Stained areas caused by dieback are never arranged in circles or parts of circles.

5. Gum is very often formed in the angles of the segments and surrounding the seed in the fruit.

Prevention.

Melanose is present in small amount in nearly all groves. It is usually found on the rank-growing water sprouts. It is of practical injury to the leaves and stems only in severe cases. This is different with the fruit, where only a small amount will render it unsalable. No treatment is known that will cure the marks caused by the disease. Prevention is the only remedy. Since the disease starts only on very young tissue, the fruit becomes affected when it is very young. Therefore, methods of prevention must be carried out in the springtime.

In 1894, Swingle and Webber found that melanose could be controlled by the use of Bordeaux mixture, or ammoniacal solution of copper carbonate. They advised two sprayings, "the first about two weeks after the flowers have fallen, and the second about a month later. A Vermorel nozzle, and a pump giving a good spray, should be used. The spray must be applied to the fruits in the form of a fine mist covering them thinly and evenly." Since these sprays are fungicides, they will kill off the natural fungus enemies of the purple scale and allow this scale to develop. Hence these sprayings should be followed at intervals with some good insecticide until the friendly fungi have returned.—B. F. Floyd, Florida Agricultural Experiment Station, in Fruit and Produce News.

CITRUS TREES REQUIRE POTASH.

Apparently California citrus growers are not alone in discussion of the decadence of orange trees. In an article on fertilizers for citrus trees in a number of the Australian Cultivator we note:

"All orchardists must, however, admit that there comes a time in the history of every orchard when, in spite of careful cultivation, spraying and fumigating and liberal application of bone manures, yields do fall off in quality, if not in quantity; and, in fact, there is every sign that something is wrong. Many practical men can also testify that they have been able to clean and restore to health and vigor neglected and dirty orchards solely by careful cultivation and judicious manuring."

The article calls attention to the fact that potash fertilizers are so high in price in that country that nitrogen and phosphoric acid have been much more abundantly supplied and urges the return of more potash to renew the vigor of the tree.

It gives the requirements of the annual product of an acre of oranges as 32 pounds of nitrogen, 13 pounds of phosphoric acid and 52 pounds of potash. For lemons the requirements are 36 pounds of nitrogen, 12 pounds of phosphoric acid and 51 pounds of potash.

According to analysis many citrus soils in Australia are rich in potash Touching upon that point the writer says:

"There is the initial difficulty, which will be recognized by every practical man, of obtaining a small sample of, say, a few pounds weight at the very most, typical of the great mass of soil contained in an acre of land to a depth of one foot; there is the difficulty that chemists have not yet been able to determine even approximately, the solvent power of the roots of crop plants; and there are also the facts that, although all plants require exactly the same substances for their proper growth and development, different plants not only require these substances in different proportions, but also possess varying powers of absorbing them from the soil. All these factors combine to make a chemical analysis alone an insufficient guide to the manurial requirements of any soil. It is true that an analysis will show whether a soil is actually lacking in any ingredient, but that is all. A soil might contain abundance of a particular constituent and yet the application of a manure containing that constituent might give very profitable results.

"It is obvious that only practical trial can prove this and in going on to consider in detail the profitable manuring of citrus fruit trees, the writer will in the first place attempt to show why it is that the great majority of growers have failed to appreciate the importance of the general rule that only a suitable combination of artificial fertilizers can give the maximum profit.

Later, referring to the potash requirements, the writer adds:

"Ask the citrus fruit growers of Australia to name the commercial fertilizers they always use and nine-tenths of them will mention "bone-dust," "blood and bone," "phosphates," "sulphate of ammonia," etc. Only the most progressive will speak of potassic manures. The explanation of this is not far to seek. Phosphatic and nitrogenous manures are readily obtainable and are continually offered to growers by merchants, while potassic manures, by reason of their high price per ton, are difficult to sell and are for this reason left severely alone by vendors.

"Now the fundamental facts which every grower who would spend money on manures to the best advantage must clearly realize are these:

(1) That of the substances essential to plants, only three become deficient as a rule in ordinary soils.

(2) That these three substances are: Nitrogen, phosphoric acid and potash.

(3) That if large crops be removed year after year, one or more of these substances must become deficient.

"With these facts clearly in mind, the requirements given above will show the sceptical in the first place that oranges and lemons remove every year large quantities of potash and nitrogen and in the second place that in animal manures, i.e., bonedust, blood, etc., there is supplied absolutely none of that most essential substance—potash."

Touching more judicious fertilizing:

"By judicious manuring is meant a proper combination of manures supplying all that the crop removes. If growers have long been in the habit of using only "phosphates," "ammonia," "blood," etc., let them look once more at the figures given and realize, if they have never done so before, how they have gone on, year after year, adding, generally in large excess, phosphoric acid and nitrogen only and have entirely neglected to supply the potash which is of such prime importance to both yield and quality of fruit."

TREES IN EUROPE.

There are splendid trees in Paris and around it, the big horse-chestnut predominating. And they have a funny fashion over there of cutting back their trees in the country every year so that in the spring you see only the great stub sticking up out of the ground eight or ten feet with a big knotty place on the top of it. Out of this knotty knob spring a hundred or so shoots which are allowed to grow all summer and perhaps until the next spring. Then they are all cut off again and used for fagots, or possibly for some other purpose which we did not discover. The trees have a queer dwarfed look, but I surmise that in a closely settled country it is necessary to cut the trees back like this in order to allow the sunshine necessary for the crops. It is likewise necessary to use every shoot for some special purpose. The American who has seen France must find his heart bleeding at the waste of trees which goes on in America. We saw large trees in France, but nothing wonderful. And everybody kept telling us that in the forest of Fountainebleau we would see marvelous trees, giants. But when we got to the forest itself they told us that in order to see the giant trees we would have to stay over and walk way back into the depths of the forest.

As it was, we saw no trees in France nor in any other country we visited which began to compare with the wonderful trees in America. The largest we saw over there would look like saplings beside the redwoods of California, or the firs of Oregon. And the wonderful old English elms proved to be not nearly so large or graceful as the elms of New England, which sprang from them. English elms are very old and gnarly. The English are proud of the "artistic shapes" of their elms. To us many of them look grotesque.—Nautilus.

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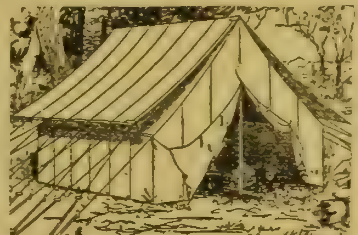

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INVESTIGATION OF GUM DISEASE OF DECIDUOUS TREES.

J. A. Prizer, Corona, California.

Visiting an orchard at Hemet, on the 14th and 15th of August of the present year (1910) for the purpose of investigating some gum troubles in apricot and peach trees, I found a great number of the trees affected, both the apricots and the peaches seemingly attacked by the disease, but the apricots suffering the most. Out of five acres of apricots there had already been lost some fifty or more trees.

The disease made its appearance in scattered parts of the orchard. Four or five trees would be affected and then it would skip a few trees and would appear on another one or two. The sap breaks out around the trunk and wherever a branch has been cut off. In the spring sap pockets were formed, the bark turning a shiny black and the sap finally breaking out and running down the trunk or forming balls of black sap on the trunk. And frequently it would not break out at all but would be found in a crystallized form under the bark.

Undoubtedly the cause of the trouble is poor cultural conditions found in this orchard. The soil is of a decomposed granite formation and runs from that into a sandy loam farther down in the valley, though in this particular orchard the soil is mostly of the granite formation. This soil shows a marked tendency to bake and last spring it was allowed to go without plowing until April, when it had baked so hard that it was almost impossible to plow it.

The improvement of the cultural conditions and the removal of the causes which undoubtedly brought about the gummosis in the peach and apricot may be discussed under the two heads, cultivation and fertilization.

So far as irrigation is concerned it would seem that the orchard had been well treated, as it has had plenty of water and this put on in a regular and uniform manner. It has been irrigated each month throughout the summer, begining with May and running 86 inches for two days on twenty-two acres.

But in the matter of cultivation we may look for our primary cause of the gum trouble. The soil as mentioned above has a great tendency to pack, and that around the crown of nearly every tree was packed hard and smooth for a space of about three feet each way from the trunk. This patch of soil should be loosened up around each tree with a mattock and kept in a loose condition throughout the spring and summer. Although the surface soil between the rows had the appearance of being in good condition, that under the surface was dry and hard, and in the form of a hardpan. This condition was probably brought about by continually plowing and cultivating at the same depth and when so caused is often called a "plow sole." It is injurious to any tree growth and many physiological troubles in the trees grown on it may be traced to this condition of the soil. It should not be permitted to continue and should be broken up with a sub-soil plow run to a depth of ten or twelve inches or even more.

A variation in the depth of succeeding cultivations and plowing will prevent its return. The bard baking of the soil last spring, as noted above, probably had not a little to do with bringing on the disease this summer, or at least gave it great opportunity to get in its work at an early date. The soil should be carefully watched and at the first sign of baking, plowing should begin. As soon as the soil is in a condition to work after the spring rains this should take place and under no circumstances should the surface be permitted to get into the hard condition of last spring.

In the matter of fertilization a great deal may be done to improve conditions and bring the trees back to their normal state. No green manure crops have ever been grown in this orchard and practically no barnyard manure or commercial fertilizer ever worked into the soil. By growing a cover crop of some legume as the pea, the physical condition of the soil may be greatly improved and a good supply of nitrogen added for plant food. Although the granite soil is usually full of the elements of plant food, yet these are not always available for the plant to use and the cover crop may do a great deal toward opening up the stores of such food. The cover crop will be of especial value to a soil like the one under consideration, through the addition of great amounts of humus. The roots of the plant extending down into the soil and decaying there will solve in a considerable measure the problem of hardpan. The soil will take water more readily and have greater power of retaining it. In short, the growing of some cover crop, such as vetch in the fall and turning it under in the late winter, or the cow pea in the summer and turning it under in the autumn, is of the utmost importance to such soil conditions as these, and is a practice which should be pursued if success is to be obtained.

The humus of the soil will also be increased by the use of stable manure, but great amounts of this need not be used if heavy green manure crops are grown. Applications of commercial phosphates will do much to give the plant new strength and vigor and should also be made.

In the treatment of the tree itself, a great deal may be done to help it recover by removing or cutting the bark in places and thus relieving the pressure in the trunk where the sap has accumulated. To do this a slit should be made from the crown to the forks of the tree wherever these accumulations have occurred. The slit should be made with a sharp knife and a strip of about a quarter of an inch wide taken out. Then an ocherous paint or some form of grafting wax should be applied to the wound. The latter is preferable and is easily made with four pounds of resin, one pound of beeswax and from half to a pint of linseed oil.

To sum up the methods to be used in bringing the trees back to their normal condition:

1. The hard soil beneath the surface or plow sole should be broken up with a subsoil plow run to a depth of ten or twelve inches and should always be kept in a loosened condition after once treated in this way. The Soil should be cultivated well up to the trees and that around the crown loosened up with a mattock; a good mulch should be kept.

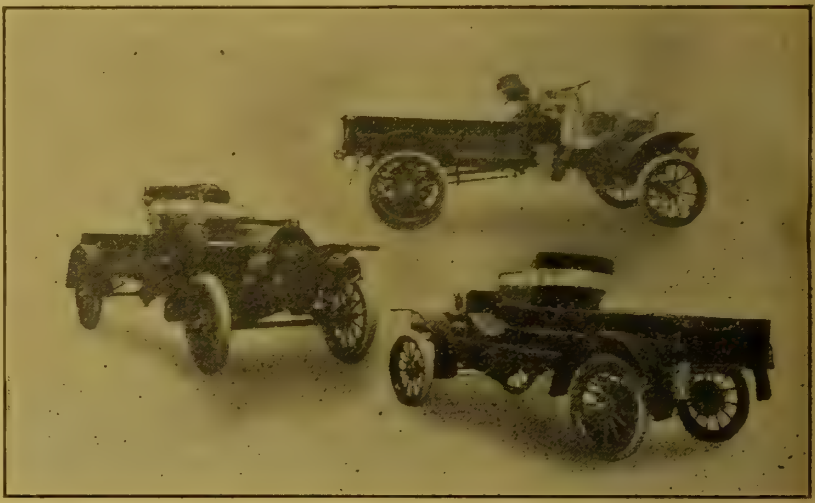
2. The surface should at no time be permitted to bake.

3. Some legume crop should be grown each year, the vetch for fall planting and the cow pea for summer planting.

4. All the stable manure that it is convenient to obtain should be placed in the soil and heavy applications of phosphates in commercial form should also be added each year.

5. The tree itself should have the bark on the trunk and if necessary on one or two of the larger branches, slit from the crown up, to relieve the pressure of the accumulated sap, and then an application of grafting wax placed over the wound.

The writer's attention was called to the fact that in the first two years after this orchard had been set out, the owner, in order to realize something immediately upon his investment, had grown potatoes and other crops between the rows of his peaches and apricots. Although Mr. Hale, one of the foremost peach growers of the country, says that potatoes are always harmful to the peach when grown between the rows, it is doubtful in this case if this fact has had much to do with bringing on the gum troubles. Probably the damage done by this practice at Hemet was in not giving the peach trees or the apricots their usual amount of attention at this time or it may have been that through shallow culivation at this time that the formation of hardpan took place.



The Duro Farm Truck

Ventura County bean farmers have already delivered 125,000 bags of Limas to the Hueneme warehouse.

TAKE CARE OF THE FARM MACHINERY.

Farm machinery is often sadly neglected when not in use. It is not uncommon to see binders, cultivators, grain-drills, plows, etc., left out all winter in the field where they were last used, or in the barn-yard. Here they are exposed to the sun, rain and snow at all times of the year, and the actual depreciation from such exposure is more than the wear caused by use. To leave machinery exposed to all kinds of weather has the same effect as it would have on house furniture, live stock, or anything that Nature has not provided with protection against the elements.

One of the best investments on the farm is a good machine-shed in which all machinery can be put when not in use. Statistics show that such an investment will mean a return of 30 per cent on the money invested. It increases the life of machinery fifty to one hundred per cent. Even at the present price of lumber, a machine-shed, 16x32, well built on a concrete foundation, will cost only about $125. Such a building will house all the farm implements used on the average Minnesota farm. To figure the life of such a building at fifteen years, with a small outlay for an occasional coat of paint, will make the annual cost of sheltering all the machines on the farm less than twenty dollars per year. Such small annual cost will pay many fold in its saving on the depreciation of the machinery.

A little time used in overhauling and cleaning up each piece of machinery, when one is through with it, is well spent. Tighten up all the bolts, saturate the bearings and cover all wearing surfaces with a good grade of machine oil. This will stay on from one year to another, and keep the parts from rusting. Plow lays and all polished parts should be cleaned and covered with oil or grease of some kind to keep them in good condition. There is no part of the farm operation at which a little time can be spent to better advantage than looking after farm machinery.—Minnesota University News.

CANADIAN FRUIT OUTLOOK.

The monthly Fruit Crop Report issued by the Department of Agriculture of Canada, shows that the apple crop generally is uneven, probably due to the difference in treatment of orchards. A much larger proportion this year have been cared for than usual and where trees have been properly looked after a good crop was harvested. The early apples have been picked and shipped, and fall varieties are going out rapidly. The fall and winter varieties are well matured and the risk of frost damage is less than in years.

Southern Ontario harvested a light crop of early apples but the fall yield was better. Winter varieties are scarce. The Norfolk Co-operative Fruit Growers' orchards produced about 30,000 barrels, but these were well cultivated and sprayed. Western Ontario is almost without winter apples. Even some well cared for orchards bore no fruit. The district on the northern shore of Lake Ontario will have a medium crop of winter apples. In this section Spies are showing up particularly well. Baldwins are good. Kings are light, and there are many failures in Goldens and Roxbury Russets. All fruit is well colored. In Eastern Ontario, the St. Lawrence Valley and the Eastern townships of Quebec winter apples are light. Duchess will produce a full crop and Wealthys medium. McIntosh Reds are light, but well sprayed orchards show good crops. A few orchards in the St. John Valley of New Brunswick will be light. In the central part of the Annapolis Valley the crop is almost a complete failure, but a slightly better crop is reported on the slopes of the North and South Mountains. The crop for the whole valley will be light and quality poor. Gravensteins are poor and light. Baldwins rank the highest in yield, but will be only medium. Ben Davis and Spies, though showing some failures, can be ranked as a light crop. Prince Edward Island has the poorest crop in years, even crabapples being almost a failure. British Columbia will harvest a large crop, but the fruit is small and deficient in color.

The principal commercial pear orchards in Eastern Canada report a medium to full crop. In Southern Ontario the Bartletts are maintaining their pre-eminence as a crop producer. Clapp's Favorites and D'Anjous show a good crop, while Keiffers have turned out better than expected. Duchess are light. The plum crop of the Dominion has not been large, both Bradshaws and Lombards being light to medium. Cranberries were light to medium. The commercial bogs in Nova Scotia had a good crop, but those in Prince Edward Island were almost a complete failure. Prospects for grapes have improved with the season and barring early frosts a medium to full crop will be harvested. —Packer.

REFUSED $30,000 FOR A TREE.

Thirty thousand dollars was the sum recently offered an Eastern Washington nursery company for an apple tree located near Lake Chelan. The proffer was made by a syndicate which desired to propagate the tree. It was turned down by the nursery company, which will develop the fruit itself.

The tree is twenty years old, and is called the Chelan. The fruit is golden yellow, and is said to be different from that of any other apple grown in Washington. It is also said to possess exceptional keeping qualities, a box having been kept in storage at Spokane for two years without any marked deterioration.

Twenty years ago, so the story runs, an Indian planted a handful of apple seeds, three of which grew. The fruit of but one of the trees was good for anything. The tree is now of great size and a prolific bearer. Last year, at the National Apple Show at Spokane, fruit from the tree took first prize for new varieties of apples.

The nursery company has for two or three years back taken grafts from the tree, and now has enough young ones to set out 1000 acres. This is to be done at once. Great precaution has been taken to prevent the theft of the young trees or of the grafts or buds.—N. W. Farm and Home.

The Department of Agriculture of the Hawaiian Islands is seeking for what it terms a "big small farmer," that is one qualified to take charge of a small tract of land on which intensive farming will be demonstrated.

Governor Hay of Washington, appointed a committee to draft a new irrigation code for that state. The committee held its first meeting in Spokane, November 17th.

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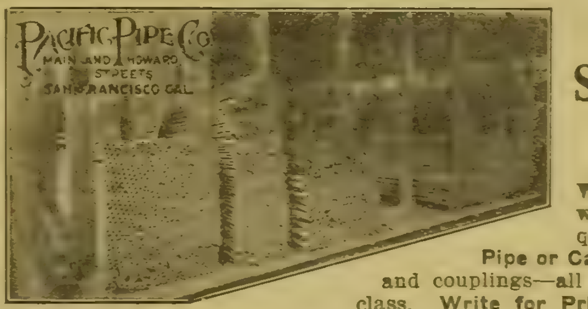

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500 Fig Trees, best varieties, 4 to 6 feet	15 00
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500 Quince Trees, 3 to 5 feet	8 00

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A writer living in California says: "I never knew a well established lavender plant to be affected detrimentally by anything. It will stand extremes of heat and cold, drouth or flood or neglect, and still yield abundance of blossoms, which is the part used for scenting and in medicine. It will grow readily from seeds or from cuttings, and yield blossoms the second year, commencing to bloom in July. While the blossoms or seeds are the parts used for making extract of lavender, every part of the plant is full of perfume. A few dried stems and leaves burned in a room will perfume and purify the atmosphere deliciously. The plant is not extensively raised and a high price is paid for its product, its blossoms or seed selling as high as fifty cents a pound.

It is recommended that women might make a neat little sum by growing the plant, as it is very easy to raise, and sells readily to druggists and others. Its uses in the way of perfume are legion. Every part of the plant may be used in some way." This may be true as regards California, but its growth might not be so ready in other localities. The demand for it is said to be large, and the supply inadequate, as it has not been grown extensively for commercial profit. But it would be a good plan for every housewife to raise a few plants for her own use, as a few blossoms or even leaves and branches laid among clothing give a most refreshing perfume. For filling sachets, it is invaluable.—The Commoner.

THE PEONY AND ITS CULTURE.

Few people know the wealth of beauty and perfume of the peony. Quite everyone knows the brilliant old, red peony or "piny" of the old-time garden. But from that to the modern peony is a great evolution. The modern peony is superior in size, perfume and finish to the chrysanthemum, with less care and more certain results for labor expended.

The requirements of the peony are simple, yet at a few periods they are very easily damaged. We have large areas to handle and cannot give them the same care one could give a few plants.

We give the soil a thorough dressing of fresh manure early in the fall and sow to rye.

We prefer to plant any time during September, but planting may be done at any time (if well-watered for a few days) from September first to May. We do not approve of lifting plants in the spring after they have begun already to make a rapid and tender growth.

Plants that are kept dormant by being dug in the fall may be planted until June with fine success. We have planted big clumps when in full bloom and they grew well, but we do not advise it except when absolutely necessary.

When planting peonies in clayey ground, they should be set about four inches deep, but in light, sandy or loamy soil, five or six inches deep. Old clumps I plant a bit deeper, leaving the crown covered lightly until late when more soil is drawn over them to make the surface level.

Never use much manure the first year on newly planted peonies, and always care should be exercised not to overmanure them. The best way is to cultivate them about three inches deep, then apply about one inch of any manure, working the ground several times before winter sets in, or they may be manured after the ground freezes, and the manure worked into the soil in the spring.

Keep all the weeds out of peonies and do not dig over three inches deep, from October until the buds are as large as acorns. Many persons have complained about their peonies not blooming, and upon investigation and from observations from my own experience I found that whenever we dug deeply around plants at the time above stated the plants either came up blind, or bore a very small percentage of good blooms, so we learned to employ shallow cultivation.

Plant peonies in the bright sunshine, away from trees that are liable to shade them or whose roots may sap the plant-food in the soil where they are planted.

In lawns where peonies are planted they should be kept well cultivated to a radius of about two feet. Never plant peonies where the crowns are likely to be covered with water longer than a very short time. Peonies under water for several days are likely to be very quickly spoiled.

Peonies are grown from a division of old plants and also from seed. From seed they require from five to eight years to come into full bloom.—Farm World.

HOW TO USE CALADIUMS.

If you have an unsightly spot in the rear of the house—which by the way should never exist—you may hide it from the casual visitor by a border of the beautiful broad-leaved caladium. Against a background of sweet peas or salvia it produces a beautiful effect. The best way to cultivate caladium is to plant the tubers early in the spring. The soil should be very rich with leaf-mold and well rotted cow or sheep manure and should be worked up with a little sand into a loose loam. The addition of bone meal, well worked into the soil, will help the growth of the plants and add to their beauty. Of the fancy-leaved caladiums those best suited to outdoor planting are those having a predominance of green in the foliage, as the highly colored kind do not do quite so well.

With Christmas coming the Cultivator may be pardoned for referring to a beautiful little 232 page book, pocket size, which would make a most acceptable offering to a lover of wild flowers. This book is "Flower Guide. Wild Flowers East of the Rockies." Of course, we wish it were West of the Rockies, but as it is, many of the flowers mentioned will be of interest to Pacific Coast people, and to those who trudged through the Eastern woodlots it brings back the woodsy odors of springtime in childhood days. It has a color plate illustration on every page representing one or sometimes three or four different flowers. The book is published by Doubleday, Page & Co. and can be supplied by the Cultivator at publishers' price, which is 75 cents for flexible cloth binding or $1.00 for leather.

Garden and Field Crops

HOME VEGETABLE GARDEN.

Much loss of time in the planting of a garden can be avoided by making a definite plan of the garden several weeks or even months before the planting is to begin. After measuring the area that is to be used for the garden, the next step is to decide what vegetables are to be grown. If space is ample this will be determined primarily by the personal tastes of the gardener and his family. However, if only a limited amount of time and attention can be given the garden it may be wise not to undertake the growing of some of the more exacting crops, such as egg plant, cauliflower and celery, even though space is unlimited. If, on the other hand, the space is limited, it may be necessary to leave out a part or all of the vegetables requiring a large amount of room, such as potatoes, sweet corn, lima beans, cucumbers, squashes, melons, and sweet potatoes. In extremely limited areas in the city there may be room for only a small bed of lettuce and radishes, to be followed by string beans or a few tomato plants. Whatever the space available, the crops to be grown should be decided upon long before the time for planting.

The next thing to decide is the amount of space which is to be devoted to each of the crops which are to be grown. This will depend partly upon the nature of growth and productiveness of the crop and partly upon the particular fondness of the family for the given product. A very small area will supply all the lettuce the family can use, while the same space devoted to sweet corn would be merely an aggravation.

In planting the garden it is well to arrange the vegetables in the order in which they are to be planted. This facilitates the preparation of the land for planting and makes it possible to maintain the unplanted portion in good friable condition with the least expenditure of labor. In order that the vegetables may be so arranged, it is necessary to know the proper time for planting each crop. Failures often result from planting some crops too early and others too late. Each crop has its own peculiarities as to temperature and moisture requirements, and planting should be timed accordingly.

Vegetables may be roughly divided into two classes; cool season and warm season crops. The former are quite hardy and will stand light frosts without injury.

Of the crops that are to be planted at the same time, those that are similar in character of growth and cultural requirements, or that occupy the land the same length of time, should be planted together, since such an arrangement forestalls the interference of one crop with another, facilitates the proper care of the various crops and simplifies the matter of clearing the land and fitting it for later planting in the case of short season crops.

Having the garden definitely planned as to the arrangement of the different vegetables and the time of planting each crop, the only other arrangements that need to be made in advance of the planting season are the selection and purchase of seeds and the manuring and plowing of the land.

As a rule, it is more satisfactory to select the seeds from the catalogue of a reliable seedsman and order them by mail, than to depend upon the supply at the grocery store. In any case, it is wise to procure the seeds considerably in advance of the planting season.

After the crops are planted, success in the vegetable garden depends chiefly upon thorough and frequent tillage. The tillage should begin as soon as the plants can be seen, and should be repeated at intervals of about one week throughout the season. Much labor will be saved by substituting a wheel hoe for the hand hoe for stirring the soil close about the plants while they are small, and by using a horse for cultivation between the rows whenever there is sufficient space. If these methods are employed, the most irksome features of vegetable gardening—the weeding and tedious hand-tillage—will be largely eliminated.—John W. Lloyd, at meeting of Illinois Horticultural Society.

ENRICHING THE GARDEN.

Well-rotted manure is the best for garden enricher. In the market gardening sections stable manure is the mainstay for keeping the truck lands filled with fertility and humus. It is spread on so abundantly that a man has to follow the plow and fork the manure into the furrow. Pulverized sheep manure and commercial fertilizers are used to a limited extent, but stable manure is the main dependence.

On garden farms where a short rotation can be followed, green crops being plowed under to keep the soil filled with vegetable matter, it may be possible to use chemical fertilizers more extensively, but on lands that are cropped year after year and made to produce in some instances a succession of crops each season, nothing can take the place of stable manure.—Western Farmer.

ORIGIN OF HUBBARD SQUASH.

James H. Gregory, the seedsman who died at his home in Marblehead, Mass., recently, once told how he became a seedsman: "A man wrote to the New England Farmer for a nice winter squash; I heard of it and we happened to have one; my father called it 'Marm Hubbard's Squash,' because we got the seed from an old lady by the name of Hubbard. I sent him some of the seeds; he tried them and so well did he like them that he wrote an article, which was published in a number of papers, describing the good points of the squash. Before I realized it I was getting orders for this squash seed from all parts of the United States."

Take a ton of your chicken droppings and land plaster and add to this about six hundred pounds of ground phosphate rock, mixing these thoroughly, and scatter over one acre of ground in the spring, then scatter evenly fifty bushels of wood ashes, or use the proper proportion of kainit, instead of wood ashes, and you will have a well-balanced fertilizer for strawberries and for general purposes.

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(Continued from page 499)

flower. The seeds of the above should be sown by the middle of April, and preferably two weeks earlier, in order to give the young plants a good start before the beginning of the hot weather.

Of the above, China asters and cosmos are the most desirable for cut flowers, while for color and display, zinnias, globe amaranths, and four-o'clocks ranks among the first. China asters, summer chrysanthemums, golden feather, cosmos, caster beans, and the morning glories are least resistant to drought and should be watered twice a week during the drier parts of the summer; the others are robust, deep-rooting plants succeeding with ordinary care, i. e., irrigation once a week or thereabouts. Morning glories are very much at home in this country and may be sown any time from April to August. As herbaceous climbers they have few equals. They range from low bloomers with scarlet or sky-blue flowers to the tall-climbing moonflower. There are at least six native morning glories in Arizona in addition to the introduced ones mentioned. Balsam apple is a rapid growing, neat-appearng vine of the gourd family with delicate green leaves and orange fruits. The castor bean, like other rapacious growers and heavy feeders requires deep, rich soil and frequent irrigation.

Among the hardier of the rather few perennial summer and fall bloomers that grow successfully at our lower altitudes, are cannas, chrysantnemums, yellow, white, orange, and rose-colored lantanas, madeira vine, the native golden columbine, white and rosy fairy lilies (Zephyranthes), and the so-called crown imperial (Crinum amabaile), besides asparagus and lavender. Cannas are among the plants par excellence for display. Without fail, they should be re-set each year in early spring. Together with chrysanthemums and the crown imperial, cannas require good culture and frequent irrigation, otherwise it were best not to try to grow such plants. Columbines succeed only with partial shade and abundant moisture, while asaparagus and lavender are among the hardiest of the list. When once established, fairy lilies need no further attention, and altogether are very satisfactory plants. Their lily-like flowers appear from June to October. Lantanas are unexcelled for southwestern planting, being continuous and profuse bloomers, though they should be cut back and given some protection during the winter season. The above perennials should be set out in the early spring—the earlier the better.

Varieties for Growing at Higher Altitudes.

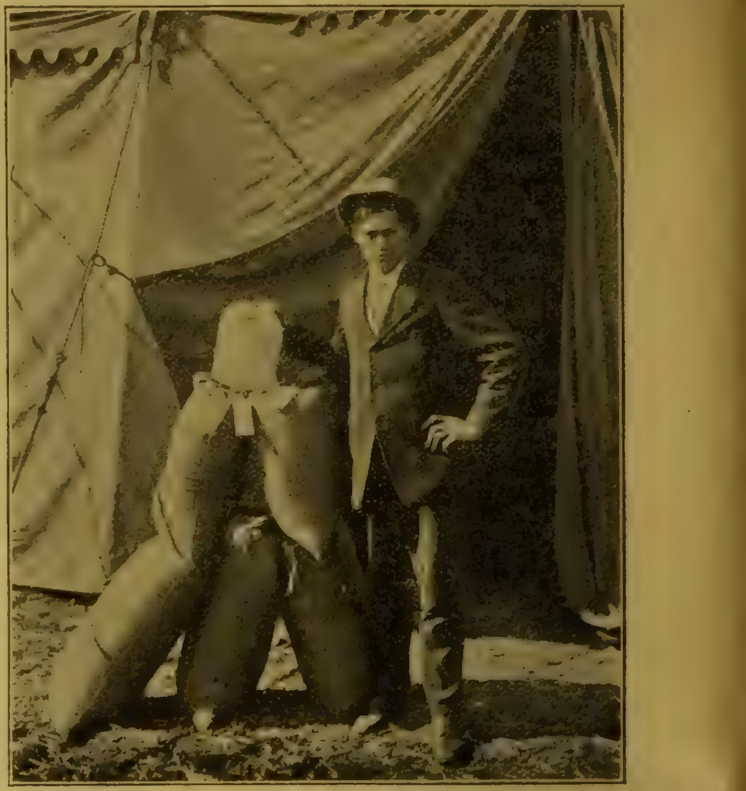
Between altitudes of 3,500 and 5,000 feet, or where the lower winter temperatures approach zero, the hardy annuals are sown to best advantage in early spring, i. e., after severe freezing weater is over, while tender-er varieties should not be sown until danger from frost is past. Perennials of whatever class are set out just previous to the time that they ordinarily begin growth, be that fall or spring. With these slight differences in planting due to the cooler spring time all the varieties noted heretofore can be grown successfully at these altitudes.

At higher mountain elevations, as for example, Flagstaff, where there is but one well defined growing season, spring planting is the rule. The conditions of growth are simpler here than elsewhere, approximating in a measure those of the prairie states to the northeast. As would be expected hardy annuals succeed best at these altitudes since the growing seasons are invariably cool, though robust summer growers like zinnias do well. On the other hand, such varieties as cosmos, chryanthemums, cannas, and castor beans are often frozen back in early September a short time after beginning to flower. In a variety flower garden in Flagstaff, the writer noted growing very luxuriantly the following plants: hollyhocks; sweet peas; sweet alyssum; candytuft; mignonette; snap dragon; foxglove; pot marigold; French marigold; China asters; Canterbury bells; sweet sultan; bachelor's buttons; coreopsis; gaillardias; corn, opium and California poppies; petunias; annual phlox; nasturtiums and morning glories, besides a goodly number of perennials. It is interesting to note that such perennial flowers as bouncing Bet, sweet William, grass and bunch pinks, Shasta daisies, phlox, larkspur, golden glow, dahlias, costmary or rosemary, tansy, gladiolus, and day lilies, together with blue grass and white clover appear entirely at home with the cool, moist growing season of the higher elevation while at the lower altitudes with great heat and aridity the growth of most of these plants is practically impossible without adequate protection.—J. J. Thornber.

STATE POLYTECHNIC SCHOOL'S BEAN GROWING CONTEST.

Last spring the California Polytechnic School at San Luis Obispo organized a bean growing contest for boys of San Luis Obispo county under eighteen years of age. The contest was organized on lines similar to those of the now famous boy's corn growing contests conducted by the schools of agriculture of the Middle West. Since this was the initial contest organized by the School a limited territory only was included. Last April the school sent out to boys who agreed to the conditions of the contest one-half pound each of three different varieties of beans—small whites, large whites, and pinks.

Under the rules of the contest the preparation of the ground, planting of the seed, cultivation and growing of the crop, harvesting and cleaning, was all done by the boy himself. The judging of the crops raised took place at the October District Agricultural Fair held at San Luis Obispo. Of the twenty boys who entered the contest Willie W. Wood of Arroyo Grande was the champion. Master Wood exhibited at the Fair 420 pounds of beans which he had grown from the one and one-half pounds of seeds. The school gave as first prize $10.00 in cash, keeping a portion of the beans raised by the prize winner for seed for next year's contest. To this amount a business man of San Luis Obispo added $17.50, the market value of the beans produced. The total first prize thus amounted to $27.50.



420 Pounds of Beans from 1½ Pounds of Seed
Grown by Wm. W. Wood of Oak Park near San Luis Obispo, Cal.

The second prize of $5.00 was won by Joaquin Pereira of San Luis Obispo, who produced 288 pounds of beans from the pound and one-half of seed furnished.

The Polytechnic School through its agricultural department is making an effort to arouse interest in agricultural instruction among the district schools within its reach, and the bean growing contest inaugurated this year is one of the methods employed for arousing activity. It is expected that next year's contest will cover a still wider area, interesting a still larger number of boys.

Fruit growers of Kootenai county, recently met at Coeur d'Alene, Idaho, and held discussions covering two days.

The Bureau of Statistics of Washington has issued tabulated information on the progress of reclamation work in that state.

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A PAYING HERD.

By Mrs. M. E. Sherman.

Cows worth retaining should make at least three hundred pounds of butter in a year. The necessity of having regular breeding animals must not be overlooked. A cow regularly breeding and producing three hundred pounds of butter fat is within easy reach of every dairyman. Many have already the bulk of their cows doing better than this and if they will only weed out the poorest ones they will find that the money they receive is greatly increased. The net income is the result that is sought by every one, except the farmer, I notice that so often at institutes when men tell of their gains, it is always the gross. Now it is perfectly possible to have a herd producing gross returns that look large, while the net is so small that it is invisible. In California if we attempt to make many large records, the cost eats up the profits when these are made officially. The cost of railroad and of official's time takes the profits out of the cows tested for that year.

Associations.

The cattle associations are naturally anxious for yearly records of cows, yet at the present time if these are to be made officially they are far too expensive to make it possible for the ordinary dairymen to compete and it makes every young animal from a cow that has a big record too expensive to the ordinary purchaser, I do not believe there is any more profit to the seller in the animals that he sells at $500 each than the ordinary breeder makes out of the animals that he sells at $150 a head. The expensive testing and feeding of the cows to produce the high records has come off their calves.

Three Hundred Pounds.

Now to return to the lowest possible amount that any dairyman should be contented to have each cow produce in his herd, three hundred pounds. Counting twenty cents a day as cost of feeding, milking and care, at present prices we have a margin of fourteen cents profit for butter or forty-two dollars for the year, counting the year at three hundred days. If the breeding is pushed the cow will freshen in five weeks after she has gone dry and bring a second calf within the year. Now if to the forty-two dollars skim milk product .6 a day is added we have $18 to add to the account beside the two calves. The cows producing three hundred pounds a year are all around us, so many of them that it is easy to get them. After a herd makes this amount then raise twenty-five pounds and after a year raise to three hundred and fifty. The fact is that plenty of cows producing only three hundred pounds have a further capacity of that second amount if fed up to it. The weeding or selecting of the cows produces within the mind of the dairyman a training that makes him wiser in his ways of attending to the cows. The only time many cows have all the food they can handle is when on pasture, yet few reason from this that if the pasture condition, of a stomach full of succulent food, was made the everyday life of the cows that they would hold to the amount of milk or butter they produce in the sweet springtime.

Statistics.

These are always dry as dust yet there are some of them that have interest right here. Some time ago back in Illinois, the tale of thirty-six herds ran about as follows. The records of 554 cows showed this difference. The best 25 of these cows produced as much butter fat as 1021 cows that had no greater capacity than the 25 poorest ones. I hope we have none that poor in California! I hardly think we have in the herds that sell milk as the cows do not have the cold weather to contend with out here. In California the majority of men hire at least part of their work done. This adds to the cost of the herd. The owner has to be boarded any way and if he does a full share of the milking it will count in the profits. A farmer never has seemed to catch on to the idea that he should count wages for himself and for his wife in estimating the actual profits.

Improvements.

Testing the cows comes first, then improve the feeding and then improve the breeding. The first testing takes out the unprofitable ones at once. Feeding liberally makes those in the profit class pay better. While breeding is looking into the future of the dairy cow in California yet I would like to say that I think there are too many rushing into the business without proper knowledge of it. I see all around me people that have taken to dairying with cows that are unfit. The old idea prevails that if we give them plenty of alfalfa they pay. Alfalfa is the best food ever known for the dairy cow but it will not make up for lack of brains in feeding or business capacit.—M. E. Sherman.

Anthrax Cure, Milk Fever Outfits. See O. J. Weber Co., 225-227-229-231 East Sixth street, Los Angeles.

MILO FOR DAIRY COWS.

Every dry land dairy farmer in eastern Calorado should plant an acre of milo for each cow that he milks and should cultivate it thoroughly to get as large a yield of grain as possible.

Milo takes the place of corn in feeding dairy cows and will yield an average of twice as much grain an acre as corn. In seasons so dry that corn will be a total failure, milo will usually yield 15 bushels of grain or more an acre.

The heads of milo may be snapped from the stalks and fed to cows giving milk. This is an economical way to feed this grain, as a cow has to chew a head a considerable time before she is satisfied to swallow it, and the more she chews it, the better it will digest.

The whole heads may be ground without threshing, and the small stems that hold the seeds form, when ground, a good material for diluting the meal and making it more easily digested.

The threshed grain may be ground before feeding. It does not pay to

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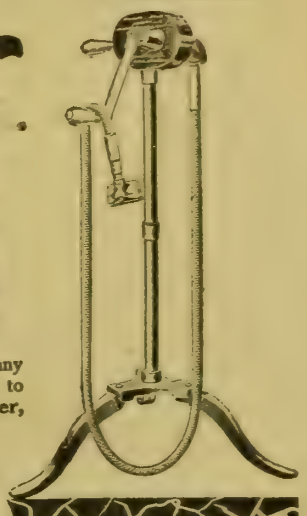

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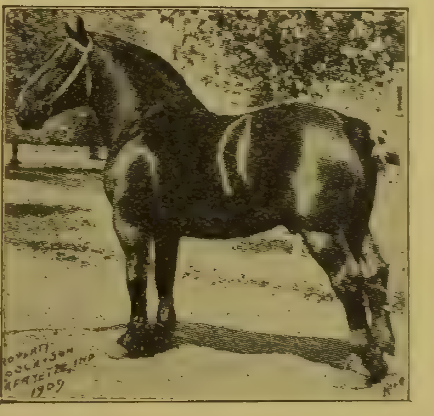

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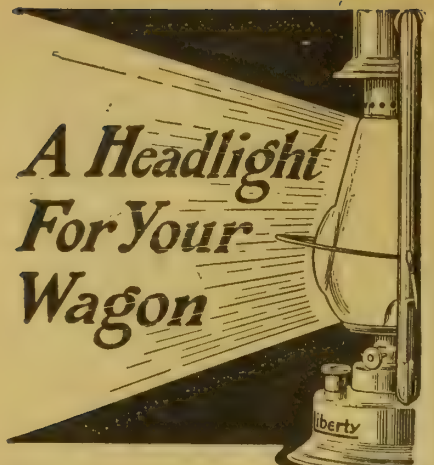

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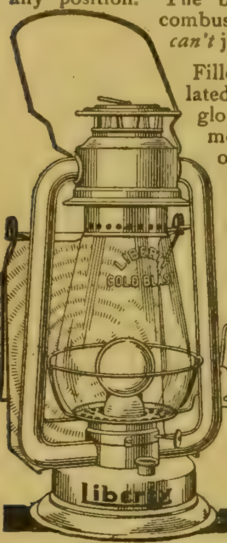

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feed unground, threshed grain, as the cow chews the whole grain but little before swallowing it, and a large proportion passes into the manure undigested.

Milo is a constipating feed, and for this reason, when fed alone, induces an unhealthful condition, which is increased if the other feeds are prairie hay and cornfodder, both of which have the same defect.

To overcome this difficulty some laxative, succulent feed should be given daily. Green cured, alfalfa hay is the best for this purpose, and a combination of alfalfa hay and the grain of milo makes a dairy ration that will produce cheaply a good flow of milk. Other good laxative feeds, well adapted for growing in eastern Colorado, are stock melons, stock beets, and sorghum hay, made from plants cut when in bloom.

Milo contains an excess of starch and is deficient in protein (flesh, milk and blood making material). It gives the best results when fed with alfalfa. The new settler on the Plains of eastern Colorado can raise sweet clover until his land is in condition for alfalfa.

Sow 10 to 12 pounds of sweet clover seed to the acre, and cut it when the first bloom appears. It will make a hay which, fed with milo, will force a good milk yield? Sweet clover cut when the plants are in full bloom, or later, is nearly worthless.

Many dry land farmers in eastern Colorado let their cows become very thin while dry during the winter. When cows are emaciated at calving time, the milk yield is reduced throughout the summer, no matter how good the summer feed. Dry cows kept in good flesh with milo will yield, after calving, more milk throughout the season.—H. M. Cottrell, Colorado Agricultural College.

DAIRYING MISTAKES.

Starting in with mixed or beef breeds and trusting to individual traits alone rather than individuality and heredity combined in one.

Selecting the cows in the season of greatest milk flow instead of on the basis of their yearly average yield of butter fat.

Trying to raise beef and butter from the same cow. This may be accomplished, but it is not dairying.

After having selected good, pure-blooded stock with records of heavy yearly yields, it is a mistake to expect that, under ordinary care, such as most farm animals receive, the cows will do much better than scrubs.

A dairy cow must be fed and sheltered. High bred, high keep.

Failure to provide silage or other succulent feed in winter is a grave mistake.

Failure to keep quarters clean, to have the cows well and warmly sheltered in winter and comfortably shaded in summer are all fatal mistakes.

The dairying chain is as strong as its weakest link, and luck will seldom make it stronger.—Western Farm.

SELECTING BREEDERS.

It is not too early to select the hens you intend using next season as breeders. It will be too late about the time you are ready to set the first eggs, if raising early and productive stock is your object. Then you will not know which pullets matured quickly; and laid early and persistently, nor the hens that hurried through the molt and came back to business quickly; now is the time to select these. Visit the hen house occasionally and band the pullets found to be laying; you will soon learn to know those that lay often without looking at their band numbers; these should be used as breeders next season.

Don't wait until hatching time to sell your surplus poultry; do it now—all the old hens and all but a few of the best males. As these mature and show their good points, cull again, reserving only enough to head a choice pen of the best laying hens and pullets. Build a small colony house on 2x8 runners and haul it in. Fifteen to twenty-five hens kept here will lay more eggs during the hatching season than the average farmer's wife will know what to do with.

A flock built up by careful selection and built down by careful elimination of all useless and unproductive members will show double the profits and give four times the satisfaction.—W. E. Vaplon, Poultryman, Colorado Agricultural College.

CHICAGO STOCK SHOW.

Pres. H. J. Waters of the Kansas Agricultural College, on a recent occasion expressed himself as follows:

"The International Live Stock Exposition, which will this year be held from November 26th to December 3rd, is the court of last resort in all matters pertaining to the improvement of live stock. It is the place where all controversies regarding superior merit are settled for the year, and as such contribute more to live stock improvement than any other single agency in America. As an object lesson it is unequaled on the continent. As a means of awakening interest in improved live stock, it and similar shows are indispensable. It is a liberal education in live stock production for any farmer, breeder or student to attend the International."

PROTECTING CATTLE FROM FLIES.

At this time of the year, much discomfort to cattle and loss to their owners is caused by flies and other insects. Feed becomes scarce at this season; and this, combined with fighting flies and ofttimes leaving such feed as there is to seek relief from the pest in the brush—or in water where this can be found—often results in a loss of weight in cattle.

In dairy herds, even where stables are darkened and the cattle kept in a part of the day, the loss in milk yields resulting from the annoyance caused by flies is often quite material.

Many different anti-fly mixtures and "dopes" have been used with more or less success. Several of those advertised have been used by the writer and found fairly efficient in keeping flies off animals for from 3 to 12 hours, varying with the nature of the mixture and the amount applied. The mixtures are usually applied most satisfactorily by means of a small hand spray-pump, which costs about a dollar. They can be thus applied in a very short time, and the only important item of expense is the mixture itself. Most of the patent mixtures cost from seventy-five cents to one dollar a gallon. Where considerable quantities are used, the necessary ingredients can

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be purchased and the mixture made up at a cost of 30 to 50 cents per gallon.

One of the common mixtures is 3 parts of fish oil and 1 part kerosene. The fish oil contained in many of them costs about 45 cents a gallon in barrel lots, or 60 cents in ten-gallon lots, in Minneapolis.

Another good mixture is: 100 parts fish oil; 50 parts oil of tar; 1 part crude carbolic acid.

Another, recommended by the Kansas Station, is: 1½ pounds resin; 2 cakes laundry soap; ½ part fish oil; ½ part kerosene. Mix thoroughly and add water to make 3 gallons.

Oil of tar—a very common ingredient, and one that gives a pleasant odor and makes the mixture stick—can be bought for 20 cents a gallon in barrels, an 30 cents in 10-gallon lots.—W. F. Handschin, Minnesota Agricultural College.

NATIONAL WOOL GROWERS MEETING.

Portland is making special plans to entertain thousands of sheep raisers and prize members of their wooly flocks at the 47th annual convention of the National Woolgrowers' Association and Mid-winter Sheep Show, to be held here January 4, 5, 6 and 7. Ample facilities at the spacious National Guard Armory have been provided for housing the meetings of the association and downstairs in the drill hall pens will be placed for prize sheep entered in the show.

Premium lists have been issued and show a fine lot of prizes for exhibits of blooded animals. The premiums cover all classes and the show promises to be the largest and best ever held by the organization.

The Hampshire Association has provided $100 to be given as specials and the Rambouillet Association has given $300. Other associations will take the matter up at their December meeting and it is expected a liberal appropriation from about every association will be given. The Angora Goat Association gives $100 for specials, besides cups; two Oregon woolen mills, the Pendleton and Salem, are making special blankets for prizes and local stores will give premiums.

The Oregon Woolgrowers' Association is going to do its part to make the show a great success. Secretary Dan P. Smythe has written to Secretary Minton of the show that the executive committee has voted to present two cups from the value of $35 to $50 each, one for the champion fine wool ram exhibited and the other for the champion coarse wool ram placed at the show.

The wool tariff will be one of the live subjects that will be given much attention at the coming convention. That the necessity exists of fighting the effort to lower the tariff on wool is the statement of Secretary George S. Walker of the Association.

FEEDING THE FARM HORSE.

Probably the most important part in the care of the horse is the feeding. A large majority of the diseases among farm horses result from faulty feeding. So many make the mistake of not securing the best feed. Their trouble begins when partially matured, musty and dusty feed is used.

Several points should be taken into consideration when we decide upon the amount of feed; whether the animal is accustomed to dry feed, and if in good flesh or in a thin, emaciated condition.

A horse should not be fed a large quantity of hay and grain without exercise. Many think that because a horse is thin in flesh no work should be required of him. It is always best to work the flesh into the animal rather than to fatten him as you would a steer.

A good plan is to have a stated program as to time and amount of feed to be given. Horses, by all means, should be fed regularly. Hay requires time for mastication and digestion. For this reason the large percentage of the hay should be fed at night. Horses soon learn the manner of giving food and water, so it is best to have one feeder and have his plan followed out for all the horses. The horse should receive some water the first thing in the morning. After watering the horse is fed a small amount of hay and then given grain after all the hay has been eaten. By this plan the feed which is the most difficult to digest is left in the stomach, and therefore receives proper digestion. The noon feed should be given after the horse is cooled and has been allowed to rest for fifteen minutes or half an hour. A small quantity of water may be given soon after the horse is brought to the barn. Feed hay, and when the animal is thoroughly cooled, give all the water he desires, after which feed the grain. At night feed the same as at noon, only give more hay; in fact feed as much hay at night as is given at both morning and noon meals. When a horse is working hard and is fed large quantities of grain, it is found advisable, once a week to give a bran mash for the evening meal. The bran acts as a laxative and prevents indigestion and possibly a case of colic.—C. L. Barnes, Colorado Agricultural College.

If you think automobiles are spoiling the horse market try to buy a good horse and see what it will cost! That is a good test, and you will be surprised to learn what is demanded. For the past 10 years this cry of death to the horse business has been raised. It frightened many New York and New England farmers out of a good opportunity. Some of those eastern farms are ideal places for raising colts. The pasturage is fine the soil firm and hilly enough for good exercise, feed can be grown cheaply, and the farms are close to the finest horse markets in the world. Yet in spite of these advantages our farmers have let the horse breeding business go largely to western farms. If that western land worth $150 or more per acre can produce good horses and ship them 1,500 miles at a profit, it stands to reason that our eastern land worth $50 or less and under the shadow of the market can do even better. What we need are the horses and faith in the business. There is a great opening for breeding and feeding the heavier type of carriage horses or horses for the army. —Rural New Yorker.

One candidate for congress from a district in eastern Oregon made his campaign on the promise of securing from the reclamation service a more just proportion of the reclamation expenditures.

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Stick to the Farm

"Rural Manhood" is the name of a new magazine issued by the Young Men's Christian Association of New York State as one of the present day efforts toward improving country life. In it we note an article on progressive California which calls attention to much of the good work being done in his state. The magazine is filled with articles such as "Why Boys Leave the Farm," "Chautauqua Farm Boys Camp," "Rural Life in China," and others.

One short article touching upon the disappointments of city life often experienced by the country boy who tries it, mentions the following incident, quoted from a daily paper. It is to be hoped the warning there given may prevent some country boy from wishing "another chance."

"Locked in his cell at the station house last night, young Johnson, who snatched a lady's pocketbook on Fillson street and was captured by the crowd in pursuit, was indeed the picture of misery. He acknowledged that the name he gave was an alias, and said that he belongs to a respectable family in the country. It appears that he lost his position as shipping clerk because of dissipation, that he gambled away most of the last week's salary and then used the rest to go on a spree. Yesterday morning he found himself out of money and friends, with no work and hungry. He grew desperate and committed the crime.

"'I just got- in with the wrong crowd when I came here,' he said.

"The only ray of hope that seemed to enter cell No. 8 was when the forlorn occupant looked up and asked the reporter, 'Do you reckon the judge would give me another chance.'"

Health in Country Regions

An editorial in World's Work calls attention to the fact that recent death rate bulletins show that in cities and states requiring registration of deaths, during the past year fifteen persons per thousand have died. This is thought to be the lowest death rate in the history of the country. In 1903 the rate was 15.4 per thousand. England and Wales go us a little better with a rate of 14.5. It is claimed that this lessening of the rate is due in part to the fight upon tuberculosis, but the reason for referring to this editorial in our columns is to call attention to the fact that the total death rate in the country is greater than that in the city, that is so far as may be determined by means of the inaccurate records kept in most country districts. One doctor of the Virginia State Board of Health reported that sanitary conditions in neighborhoods of prosperous and reasonably intelligent country folk in that state were often appalling.

"In a word, the preventive measures and precautions that have become common in cities are yet unknown in many parts of the country. One naturally asks, 'Why, then, do the country people not die by scores and hundreds?' The answer is, 'They do.' Where accurate statistics are required, there is no knowledge on the subject. Preventable deaths and diseases are accepted as inevitable, and the presence of a few very old people in a community (and you can find them in any part of the world) is regarded as proof positive of the good health of the masses. Here is one of the pressing problems of country life."

Roadside Weeds

Horticultural commissioners have been confronted with a difficulty in caring for weeds which are pests along country roadways. Notice to acreage owners to abate the nuisance of Johnson grass, morning glory or other serious pest is met with the statement that it will return immediately from the infestation permitted along the roadsides. Whether this work should be done by the county or the abutting property owners is a question not yet satisfactorily settled. The county horticultural commission has power to order the cleaning up. but who supplies the funds? It is not the custom to take money for this purpose from the road fund, which is never too large, and the abutting property owner feels it unjust to throw the expense on him. This situation has been met in Los Angeles county by the board of supervisors taking money from the general fund; then notice is served on property owners alongside and the usual excuse being taken away there remains no reason for not abating the nuisance.

The best method of destroying Johnson grass is yet to be found. The laborious plowing and raking out of roots and work with the grub hoe is used wherever it is possible. Chemical tests are also being made, but nothing along this line has resulted satisfactorily. A new chemical is now being offered, but what merit it has we are not informed.

Fruit Growers Convention

We have from O. E. Bremner, secretary to State Horticultural Commissioner Jeffrey, announcement of the Thirty-eighth California State Fruit Growers Convention at Stockton, December 6-9. The Stockton Entertainment Committee consists of Messrs. J. E. Hall, D. B. Morrill, and Frank L. Williams.

Regarding the program which is not yet fully arranged the Call says:

"This fall convention is in a measure the summing up of the fruit season of the year from both a cultural and marketing aspect, and with these two phases before us we will work out the problems most likely to confront us the coming season.

"The success achieved during the past year by the deciduous fruit growers in the northern portion of our state is largely accountable to the widespread influence of the standardization movement which was inaugurated last fall; how great this influence has been on our industry and is to be in the future we hope to have clearly set before us during the day's session devoted to this important subject. The reports and papers on this topic will be taken up and discussed by those most intimately associated with the movement the past year, and in this connection we wish to say that as ample time has been provided for the discussion of all points brought out, it is to be hoped that every one will come prepared to take an active part in this portion of the programme. We realize that it is quite impossible to present every topic of particular interest that should engage out attention at the present time, and we must, therefore, select those which will reach the greatest number and produce the most permanent good. The subject of standardization stands alone in its general importance, and is sufficient to justify every effort on your part to attend.

"The programme as outlined presents other important matters for your consideration, and it would be incomplete without a session devoted to grapes, particularly as San Joaquin county is famed as the home of our renowned Flame Tokay. Wine and raisin grapes will also come in for a portion of this session.

"Among other timely subjects will appear squirrel eradication, colonizing northern California, agricultural education, agricultural legislation, and special subjects on such topics as soil bacteria and insect problems, besides many others of equal importance and interest."

Florida's Loss

Many California fruit growers will recall meeting Dr. F. W. Inman who was at the head of the Florida delegation of orange growers visiting California a year and two years ago, for Dr. Inman has made two trips of investigation into conditions in California orange groves and packing houses. It is with regret that we chronicle his death at his home at Florence Villa, November 7th. Dr. Inman was the father of the exchange movement in Florida and its inspiration since its founding. The fruit growers of Florida can erect no greater monument to this man than the perfecting of the organization to which he gave so much energy. From the resolutions adopted by the Florida exchange we clip the following:

"His life has been full of unselfish devotion to the interests that concern us as an organization, community, and state. His intiring efforts in behalf of the Florida Citrus Exchange have endeared to us his memory, and will cause us to miss his encouraging presence at our gatherings.

"His was the master mind which conceived and brought to a happy conclusion the crowning event of his busy life, our Florida Citrus Exchange and he leaves to us the burden of carrying the work to a successful conclusion.

"Let us not shirk the responsibility, but let the work which we shall endeavor, and eventually accomplish, bear testimony to the hopes and wishes of our departed friend.

"His integrity, his benevolence, his sterling character, stand as a monument to his memory, and a fit example for our emulation; and should nerve us to our greatest efforts to consummate and perpetuate the work he so well began."

The quality of corn is given by the Crop Reporting Board of the Department of Agriculture this year as 87.2 per cent as against a ten year average of 84.4. Potatoes are slightly better than the ten-year average. Wheat shows up well this year with an average weight of 58.5 pounds per bushel as against a weight of 57.9 last year and 57.6 ten-year average. With barley the average weight per measured bushel is 46.9 pounds.

Wenatchee Valley apple growers pooled some 275,000 boxes of apples which they disposed of to one purchaser at $1.75 to $2.25 per box. The Valley will this year have its greatest output. It is estimated that it will reach well up toward 3,000 cars.

Agricultural News Notes of the Pacific Coast

Northern California

Davis Tokay grapes have proven a very profitable crop this season.

A Tehama county 2000 acre orchard recently sold for $50,000.

Sutter county broom corn growers had a most profitable crop this year.

The new town of Gerber, Tehama county, has just established an alfalfa meal mill.

Poultry dealers at Chico, Butte county, predict a 30 cent price on holiday turkeys.

Stockton's Poultry Show last week was pronounced one of the most successful events of its kind.

Castro Valley near Haywards has long been a poultry center and is now appealing for more dairies.

The next meeting of the Sonoma County Pomona Grange will be held at Petaluma next Saturday.

Humboldt and Mendocino counties have been given light showers which have freshened up the pastures.

The farmers of Davis, Yolo county, are organizing the Farmers Telephone System, to be a purely mutual company.

Sonoma county was visited by a killing frost on the 11th. Tomatoes and similar tender plants were killed to the ground.

A Corning poultry raiser who started seven years ago with $500 capital now sells 7500 chickens and thousands of eggs every year.

Marin county dairymen are investigating as to advisability of transferring their activities to the Glenn and Colusa county sections.

The tract of 18,000 acres of swamp land north of McArthur, Shasta county, is to be reclaimed by the construction of a four and a half mile canal.

A new fruit purchasing company is offering $40 per ton for Sebastopol berries. The Berry Growers Association netted last year about $63 per ton.

Petaluma's Poultry Show will depart from the usual poultry show custom and elect a queen to preside during festivities. The show dates are December 7-10.

Representatives of various Sonoma county Granges have appeared before the county supervisors and urged the appointment of a county forestry commission.

The Shasta County Farmers Protective Association at Anderson at a recent meeting received report from a committee that the smelters which have installed smoke condensers are still giving out poisonous fumes.

Rocklin, Placer county, shipped its first car of oanges on November 1st.

Examinations for forest rangers for the Stanislaus Reserve were held last week and eight applicants have forwarded their examination papers to Washington.

The President has signed a proclamation eliminating about 3000 acres from the Stanislaus National Forest and adding to it nearly 7,000 acres. The area eliminated is chaparral land on the west side of the North Fork of the Tuolumne.

Central California

A few small sales of raisins have been made as low as 2½ cents.

Tulare county Emperor grapes are selling well, some commanding well up toward the $2,000 per car mark.

The Pajaro Valley has already shipped out about 3,000 cars of apples. There are about 1,000 cars yet to go.

President Barrett of the National Farmers Union addressed the farmers of Fresno county at Fresno last week.

Raisin growers at Clovis, Fresno county, have declared their intention of holding raisins until a better price prevails.

Horticultural Commissioner Volck of Santa Cruz county has been appointed lecturer at the State Farm at Davis.

A big exhibit of Turkish tobacco from eastern Fresno county is being made at the Chicago Land & Irrigation Congress.

The Kerman Creamery paid its patrons 38 cents for butterfat for last month and predicts 40 cents for the coming month.

The president of the National Farmers Union has announced that that organization will take up the fight against the raisin seeder patent.

Secretary Miot of Tulare county Board of Trade reports the arrival of fruit exhibits in Chicago in excellent condition and much interest taken in the exhibit.

An orange grower at Porterville, Tulare county, took advice from the State University as to soil analysis and cultural practice and secured very profitable results from his grove.

It is estimated that the 493 fires in the forests of this state during the last year burned over 108,000 acres of private and 220,000 acres of public land.

The stockholders of the Danish Cooperative Creamery at Fresno will build a new plant, the old one having been built twelve years ago. The new one will have much greater capacity.

The Tulare County Forestry Board is now organized with John Tuohy of Tulare, President, and W. A. Gates of Dinuba, Secretary. The Board will have charge of the forests and roadside trees.

The Committée of the Fresno Chamber of Commerce investigating shortage of this year's crop, states that Muscats are 19 per cent short; Thompson Seedless 26½ per cent; and Sultanas 17 per cent.

A suit is on in Santa Clara county courts brought by a fruit grower against a buyer for damages because of rejection of fruit contracted for, 172,000 pounds of prunes, at a contract price of 4¾ cents. The first prunes delivered, which were all but 40,000 pounds, were accepted at the full price, the later offerings being rejected because of claimed inferior quality. It is a significant fact, however, that the price had materially declined meantime.

Southern California

Imperial county farmers are planning for a big fair at El Centro, December 15,17.

The Sisquoc Investment Company has just completed a large dam near Santa Maria.

The best cotton sale reported from the Imperial Valley up to this date is 100 bales at 14 cents.

A section of Escondido High School is engaged in practical agriculture as a part of its course.

San Bernardino county's horticultural commission is giving special attention to Russian thistle inspection.

The first shipment of cotton from the Imperial Valley was from Brawley, the car bringing $3,000 to growers.

San Pasqual Valley in San Diego county is greatly increasing its wealth by the sinking of many artesian wells.

Farmers of Antelope Valley, Los Angeles county, will plant extensively of orchards and alfalfa during the coming season.

Southern California turkey raisers held for stiff Thanksgiving prices, many of them commanding as high as twenty-six cents.

The 1400 acre park which is to be the site of the Panama-California Exposition at San Diego has been named Balboa Park.

The president of the National Farmers Union visited the Imperial Valley last week making addresses at El Centro and Brawley.

Agricultural products of Santa Barbara county aggregated $10,000,000 during the past year. Beans are the principal factor.

Owing to scarcity of labor cotton growers of Imperial Valley are compelled to pay $1.25 per hundred pounds for picking.

Much mesa land near Palo Verde, eastern Riverside county, is being purchased for the planting of oranges the coming season.

Norwalk, Los Angeles county, shipped 450 carloads of beets, the farmers receiving in the neighborhood of five dollars per ton.

The agricultural productions of Orange county for the past year aggregated about $13,000,000; $2,000,000 of this was from sugar beets.

The Riverside County Horticultural Commissioner has a big force of men working with fumigating tents, about 1200 acres per month being covered.

A Redlands manufacturer has perfected an auto-cultivator which has been tested to the satisfaction of many orchardists who saw its recent trial.

A veterinarian of the local branch of the Bureau of Animal Industry reports Southern California to be freer from Texas fever tick than for many years.

The walnut harvest of the various southern counties is practically ended and while running lighter than anticipated earlier, exceptionally fine stock has been harvested.

The Coast

A farmers institute special will traverse northern Utah in early December.

Spokane apple growers are now hauling their fruit to market through the snow.

The Spokane county Farmers Union has decided to build a large warehouse at Spangle.

One stock man in Maricopa county, Arizona, is introducing a number of high-bred Angora goats.

Ninety five per cent of the fruit of the Inland Empire in eastern Washington, is grown under irrigation.

The Record at Paradise, Arizona, reports examples of dry farming which have been very successful.

Wenatchee, Washington, plans to boost the sale of its apple lands and to that end has raised a fund of $16,000.

Grapegrowers of Columbia and Lower Yakima Valleys, Washington, held a meeting at Kennewick last week.

The Moro Province Agricultural Fair will be held at Zamboanga on the island of Mindanao, February 1-7.

The Department of Agriculture is doing experimental pre-cooling of apple shipments in the Willamette Valley.

Blue Pearmain apple trees over 50 years old at Waitsburg, Washington, are still bearing exceptionally profitable crops.

Cashmere, Washington, is making an exhibit at the National Apple Show which will later be transferred to Chicago.

The Thirteenth Annual Convention of the Oregon State Woolgrowers Association will be held in Portland, January 3rd.

North Yakima, Washington, produced on its farms during the past year $17,050,000. Of this $4,000,000 was for apples.

It will require 50,000,000 feet of lumber to construct the 10,000,000 boxes required for the Inland Empire apple crop of 1910.

The rainfall in the Inland Empire of Eastern Washington was heavier during the month of October this year than ever before.

Cattlemen at Wilcox, Cochise county, Arizona, are making large shipments of cattle, largely to the Los Angeles market. This county has shipped more than 20,000 cattle during the present season.

The port of Zamboanga, P. I. showed agricultural exports during the month of September amounting to 95,605 pesos, or more than double those of the same month the preceding year.

Representatives of large interests from all over the Pacific Coast met in San Francisco last week in the Pacific Coast Congress to discuss matters of general interest and especially urge such matters as would be beneficially discussed in the national congress. Representatives of ten states attended.

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Practical Poultry Culture

PETTING DOMESTIC ANIMALS.

There is a difference of opinion as to the advisability of petting the live stock and animals on a ranch. Some hold that cows or horses, if fondled much and allowed to rub noses too freely with people are apt to become unruly and hard to manage. Not because they are afraid or wild, but because they are not. They have had so much association with the ones by whom they are soon to be brought under control that they have lost all respect for them.

They are like children who are given the hammer and nails, the cut-glass and looking-glass—they soon turn the lack of authority into lawlessness and cause great damage. I have seen cows that had been raised as pets, toss children over the fence with no more thought as to the effect that such tossing would have on the youngster than a wild bronco steer would have had.

Horses that have been raised around the back door, and fed apples and plug tobacco, and allowed to bite the arms and hands of the donors in friendly play, have sometimes developed into the most artful biters and kickers when grown. Of course, it is all done in play; but it counts very little to mankind in general when their brains are being kicked out whether the intent was playful or aggressive. The result does not justify any extenuation even if the intent was not unkind.

The result of much petting upon the owners themselves is demoralizing, for it makes the animal so much like a member of the family that it is almost impossible to sell it, even when a real necessity occurs for such a transaction.

We have often kept many an old hen and rooster until their period of usefulness was long past, and until, in fact, they died of old age, rather than sell them or consign them to a fricassee. It is senseless beyond conditions of excusing; but we are such creatures of sentiment, the prey of our own emotions, that we can not, when once these are set in motion, reduce them to a power of common sense and reason. Maybe it is just as well—in some ways—that we can not, but it causes us many an inconvenience and pain because it is so.

Trading on the superstition that a pig raised a pet will not be a nuisance, a sow was once raised by friendly folks. She was as gentle as a lamb or young kitten, while a young shoat but when maternity came upon her, she chased every one off the plantation, and had the hired men climbing trees and yelling for the dogs and the shotgun, before they could get back to safety. It was only by the most skilful maneuvering that she was finally induced to come into a pen and be providently provided with safe selter and food. She knew mankind and feared them not.

It is the same with cows. We have one beautiful big black cow, who is so gentle that the children ride her, and she will follow the men all over the place to have her head and neck rubbed. Well, you should see her patrol the yards and run for a half mile, straight as an arrow, after people, dogs and everything, when she has a calf. We call her, at such times, "Rough-house Kelly," for she moves like a whirlwind, and though she might not intend to knock down a friend when after a dog, the damage is just as great as if she really intended so to do.

It may be that the advantages in other ways offset the disadvantages herein mentioned, but it would seem more practical not to pet the stock too much, but treat them with kindly care and respect.—E. M. Stetson, of Lankershim, in Farm Journal.

A ROUP CURE.

It is one thing to raise a fine bunch of fowls and quite another thing to dispose of them in the pink of condition. Sick chickens are a very common thing at the approach of winter and unless you give them good attention you will probably lose heavily. Roup often makes its appearance where fowls are carelessly managed.

You can scarcely pick up a poultry journal but what you find something written upon the subject of roup, yet inquiries come to the writer almost daily asking for a cure for roup, etc. Roup is an enemy to hundreds that are striving to make poultry-keeping a paying proposition. It must be remembered that sickness of any kind in fowls is more easily prevented than cured. What causes roup any way is the question that comes to every breeder that encounters this most dreaded disease. In a majority of instances the fowls are allowed to crowd in the broad coops during the late fall almost like sardines in a can, consequently they became heated to the highest degree, come out in the cold frosty air and the result is colds and roup. Just as certain as fowls are allowed to "crowd" in the chick coops just that certain you will have roup and plenty of it.

Where fowls have been suffering with roup more or less for two or three years, I know of no surer or quicker remedy than to rid the premises entirely of all kinds of fowls for at least six months until you can thoroughly clean the place, destroying every germ of the disease before stocking up again. In restocking your place see that your new fowls have no trace of the disease. I am aware that if you have a choice lot of high-class birds it would be hard to dispose of them and get started up again with their equal in quality. But I can see no other way out of it, remember where you have roup thoroughly stamped into your flock for several generations back. It is like consumption in the human family, simply impossible to cure. In fact I have seen fowls suffering with genuine consumption. Where the disease is so thoroughly stamped in your flock it would be wise to kill and burn. Where roup apears in acute form the first thing to do is to separate all the sick fowls from the well ones, take a sewing machine oil can and force six or eight drops in each nostril. Repeat this treatment for three or four days each night and morning and give one tablespoonful of milk with three grains of bromide of potassium in the milk.

This treatment is a reliable cure for roup in acute form but where the disease is so firmly fixed in the sys-

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tem as to transmit the disease from one generation to another, nothing will cure the disease.

Where the fowls show a slight cold and the weather is damp and chilly, I give a pinch of quinine to a gallon of mash made of boiled rice and wheat bran. One teaspoonful of quinine to a gallon of mash will make a good stimulant for the fowls during a sudden change in the weather.

I am confident I have saved many by using the foregoing treatment. I procured the treatment from a poultry journal several years ago, which shows the advantage of subscribing for and reading good poultry literature.—J. C. Clipp in Poultry.

SHIPPING DRESSED POULTRY.

After the fowls have been dressed and are thoroughly cooled, they will be ready for packing. Poultry dressed for market should be kept off feed at least 24 hours previous to slaughter and should not be drawn before it is packed for shipment. The action of the air on the inside of the fowl will cause it to spoil, and make it impossible to keep in good condition. Use a flat box, in which two layers of poultry can be packed. Wrap the head of each bird in paper, so that any blood which may be left in the head will not come in contact with the body of the fowl and soil it. In some cases the whole bird is wrapped in wax paper.

Start a layer in the bottom of the box; take each bird separately and fold the head to one side, and place it in the box with the head up. Continue in this way until the bottom layer is filled. Put in the upper layer the same way, except that the head is in the middle and the side of the breast is up. If this method is followed in packing, either side of the box may be opened when it reaches the market, and a nice, uniform lot of poultry will meet the eye of the purchaser.

The poultry may be packed in barrels or larger boxes; but small flat boxes are preferred, because they are easier to handle, and there is also less danger of spoiling while they are being shipped.

It is a good plan to establish a permanent trade with some commission firm, meat-dealer, or large hotel, to supply them with poultry. This will insure a better price than when shipped only occasionally.

Poultry should be sent by express, so as to be on the road the least possible time. The cases, when shipped, should be plainly marked for whom and from whom they are; the number of birds in the case, and the weight.—W. H. Tomhave, University Farm, St. Paul, Minnesota.

HOW TO PICK A DUCK.

One of our ranchers wants to know how a duck should be picked and I shouldn't wonder if there were many others who would like to know, for there exists an idea that getting the feathers off a duck in a reasonably short time is wellnigh an impossibility. Once a lady told me how she and her husband stood watch and watch on the job of removing a duck's feathers and worked far into the night, and she warned all and sundry against the duck proposition because of that experience. In reality it is not job at all if done properly. Success principally depends upon killing the duck very dead, immediately and all at once, so that it dies instantaneously, for should the fowl die slowly the muscles tighten and the feathers are held with the grip of a vice. A good way is to use a short, heavy club, rapping the bird smartly on the head with it. Then stick in the throat with the killing knife. The fowl should die instantly and the muscles holding the feathers relax. Pull out the tail feathers, then wet the hand and push most of the feathers off. Professional pickers on the duck ranches shave off down and pin feathers with a sharp knife, only a few feathers have to be pulled out when an expert does the job, and 10 minutes per duck is all the time required to kill and pick.—D. Tancred in the Ranch.

CARE OF POULTRY HOUSES.

A well-kept chicken-house is one that is cleaned often. Some poultry-raisers clean their houses every day and would not think of neglecting this job.

When the house has been thoroughly cleaned, whether this is done every day or not so often, sprinkle the floor generously with air-slaked lime and dust a little in the nest. If there are insects in the house smoke it with sulphur and then wrap a cloth around a stick and apply coal oil to the roosts. It is also a good plan to whitewash the house on the inside occasionally. When a chicken-house is taken care of in this way it never gets in bad condition and the fowls will be comparatively free from parasites.

Another thing that will add to the comfort and cleanliness of the chickens is a box filled with dust and ashes where they can take a dust bath. This will need to be replenished quite often, for there will be chickens in it most of the time and the dust will be carried away in their feathers.—Michigan Farmer.

If coops are not well ventilated the growing chicks will be too warm during the night and will sweat out more strength during the hours in which they ought to rest than they will gain under the most favorable conditions during the day.

POULTRY SHOW DATES.

Seattle, Wash., Dec. 5-10, 1910. F. E. Barth, Secretary.

Portland, Oregon, Dec. 5-10, 1910. J. C. Murray, Secretary; M. W. Coates and Harry H. Collier, Judges.

Petaluma, Cal., Dec. 8-11, 1910. Fourth Annual Poultry Show of the Petaluma Poultry Association. H. R. Campbell, Secretary, Petaluma.

Santa Barbara, Cal., Dec. 18-19, 1910. The annual show of the Santa Barbara Poultry and Pet Stock Association. W. E. Lingard, Secretary, R. F. D. No. 2, Santa Barbara, Cal.

Ashcroft, B. C., Dec. 23-31, 1910. W. Maxwell, Secretary; H. H. Collier, Judge.

Tacoma, Wash, January 3-11, 1911. Frank L. White, Secretary, South Tacoma; Miller Purvis, Judge.

San Diego, Jan. 4-5-6-7, 1911. San Diego Pigeon and Pet Stock Club. A P. A. rules. W. C. McDougal, Secre-

Los Angeles, Cal., Jan. 5-11, 1911. Annual of The Poultry Breeders Association of Southern California at Chutes Park. A. H. Memler, Secretary, San Gabriel.

Colfax, Wash., Jan. 10-14, 1911. H. Rosenkranz, Secretary. H. H. Collier, Judge.

Walla Walla, Wash., Jan. 17-21, 1911 H. Dickinson, Secretary; H. H. Collier, Judge.

Jerome, Idaho, January 24-28, 1911. Wm. N. Hardwick, Secretary.

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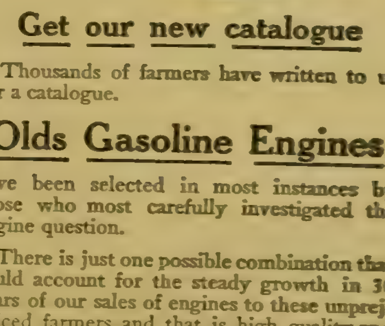

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SAN JOAQUIN COUNTY POULTRY SHOW.

The management of the San Joaquin County Poultry Association is justly gratified at the results of the show pulled off in Stockton November 9-12. There were over 1200 individuals exhibited and many of them were high scoring birds and the average was exceptionally high. As between farm raised poultry and town-lot exhibits we fear the town-lotter had the advantage. The farmer may be too busy with his general work to stop to exhibit at a poultry show, but we know he will be much benefited by making comparisons such as are in evidence at an exhibition like this. Practically all classes were filled at this show, but perhaps the bantam fanciers were the largest exhibitors and in this class some almost perfect specimens were shown. The winners of specials were:

Grand prize for highest scoring bird in the show—J. Wildreth Crow of Oakland.

Cup for best display of pheasants—John D. Gall of Stockton.

Henry Lonjers cup for highest scoring male in American class—Charles R. Bliven of Santa Cruz.

Hoffman Cafe cup for highest scoring bird in Asiatic class—William A. French of Stockton.

Albert B. Parker cup for highest scoring bird shown by amateur of Stockton—Not yet awarded.

James H. Kroh cup for largest display of black Minorcas—William A. French.

Otto von Detten cup for highest scoring bird in Mediterranean class—O. E. Crawford of Stockton.

Logan enlarged photo to highest scoring white male, bantams excluded—William N. Ingram of Fruitvale.

Walter Sibley cup for largest display of one variety by resident of San Joaquin county—Eugene P. Sabin of Stockton.

Cup for best bird in Dutch class—C. G. Siegfried of Alameda.

Eugene D. Graham cup for best Cornish fowl in show—William T. French of Stockton.

Cup for largest display of turkeys—Ed Hart of Clements.

Harry T. Fee cup for largest display of ducks—William A. French of Stockton.

Ben M. Woodhull cup for best barred Plymouth Rock cockerel and pullet mating pens—Eugene P. Sabin of Stockton.

Hammond & Rardley cup for best pair of Barred Plymouth Rocks—Eugene P. Sabin of Stockton.

Coulson Poultry and Stock Food Company cup for best particolored cock, cockerel, hen and pullet—Eugene P. Sabin of Stockton.

Eugene P. Sabin cup for largest display of Leghorns—George W. Poppelwell of Stockton.

George H. Croley Company, Inc., cup for largest display of bantam—A. A. Arnold of Stockton.

Cup for largest display of Orpingtons by resident of San Joaquin county—W. D. Garden of Stockton.

Medal for best display of pit games—Asa M. Clark of Stockton.

Flatiron cup for 10 highest scoring birds of one variety—William H. Ingram of Fruitvale.

J. L. Phelps & Co. subscription to Daily Independent for highest scoring particolored chicken—Ben M. Woodhull of Fruitvale.

George Gorman cup for largest display of White Orpingtons—W. H. Ingram of Fruitvale.

Major Reibenstein cup for largest display of Wyandottes— A. L. Jenkins of San Rafael.

R. L. Wooster cup for highest scoring bantam in show—J. W. Crow of Oakland.

Law T. Freitas cup for largest display of Buff Orpingtons—W. S. Sullivan of Agnews.

Cup for best pen of Buff Cochin bantams—Ben M. Woodhull of Stockton.

American fence construction company cup for best bird exhibited by member—Ben M. Woodhull of Stockton.

Cornelius Leonard cup for best display of Anconas, L. M. Moore, Stockton.

Wm. H. McKay cup for best Houdans was won by Wm. A. French, Stockton.

The John D. Gall cup for largest entry outside exhibitor, Wm. A. Ingram.

ALAMEDA COUNTY POULTRY SHOW.

This is the week of the Alameda County Poultry Show. Fanciers around the Bay, and then some, are crowing over ribbons blue and ribbons red. Besides the various national associations are making handsome offers so that the contest is out for the handsome birds of the state.

SHIPPING CRATES.

Shipping crates should be light and durable. They should be commodious, large enough to accommodate the fowl or fowls to be shipped in them. Crates that are at least two feet in height are to be commended. A foot of ground or floor space should be allowed each fowl. A crate square or oblong is the usual shape and should be ventilated near the top on the sides. Handles may be added to assist those who handle the crate while en route.

The best material for a crate is white pine, for it is light and strong. The corners of the crate should be reinforced with posts as here is where the most strain will come in handling it. The cover may be fastened in with a padlock or a hasp or some device of one's own invention; but the padlock will prevent one's exchanging birds during shipment.

It is a good plan to paint all shipping coops or crates an attractive color, together with the names of your plant or your own name and address for in this way you would advertise your business. Have the words: "Return to" precede your name and address so your crates will come back to you. The express companies make no charge for returning empty crates.

It is a poor idea to use berry crates, dry goods boxes, or anything one can find in which to make his shipments Such a course looks slovenly to the outside world and makes a poor impression on your customers. "What is worth doing at all, is worth doing well." Endeavor to use uniform crates, that appeal to the eyes, and they will attract attention everywhere and bring you business wherever they go.—Successful Farming.

FALL-HATCHED CHICKENS.

The demands of the market now require spring and fall hatching of chickens. Formerly it was all spring hatching, but the change and great increase in the demands for fancy poultry show that the fall hatch is almost as profitable as the early spring product. Some practical breeders have found that the late hatched females lay the largest and most eggs and produce more eggs during July and August than do stock hatched in February and March which begin to lay in October. It is safe to say that it depends upon when and how the chickens are to be turned off whether or not they should be hatched in August and September or even in July. Males hatched from July to September make the best market poultry in February, March and April when they bring extremely high prices.—Field and Farm.

A DUST BATH.

When fowls are confined in winter they should have access to some kind of dry and dusty wallowing places. If such are given them they will generally keep themselves free from lice Quantities of dry dust or earth should be gathered in the fall so that it may be given to the hens during the time they are compelled to stay indoors. A box of common six-inch boards, about four feet square, placed where it will remain dry, filled with dry dust, into which a few drops of carbolic acid are sprinkled, will furnish the hens of an ordinary yard with rooms and means to keep themselves free from lice and their flesh clean, which will result in better health and more eggs—Kansas Farmer.

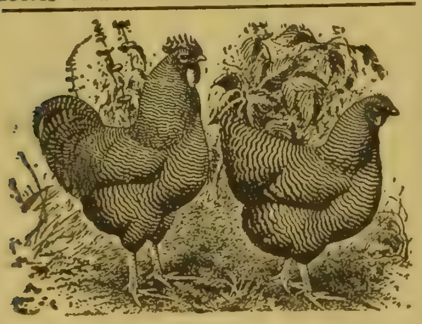
WHEN FOWLS ARE BLIND.

At all seasons of the year both grown fowls and chicks sometime appear to be blind. The cause ma be due to disease or to drafts of ai at night. In cases of this kind, th eyelids are often stuck together s firmly that the birds cannot ope them without assistance, and whe both eyes are in this condition the cannot see to eat readily, therefor lose flesh for want of food. Thes fowls can often be saved by dippin their heads in clean warm water an washing their eyes open, then anoin ing with vaseline.—Farm and Ranc

ROOSTS AND NESTS.

Roosts as well as nests are be made removable. It facilitates clea ing out the droppings and the pol are more easily whitewashed. Son of mine are hinged to the wall they may be hooked up out of t way.

Careful attention to roosts a nests is essential to good results all times, but particularly so duri the winter months, when the he are confined to the houses much the time.—Agricultural Epitomist.



To the Poultry Raisers:

Do you want sick, mopey chickens, or do you want strong, healthy ones?

Above are the kind of healthy chickens found on a ranch where Merval is used. Why not give your chickens Merval and have strong, healthy birds like these?

Merval will cure Roup in a week, and other diseases such as Canker, Chicken Pox and Diarrhoea in ten days.

Merval is also a fine tonic for run down hens. It puts them into condition again, which means more eggs.

Get a can from your dealer today. If he does not sell Merval, send us one dollar and we will forward you a one-pound can, postage paid.

Do it now. Remember, Merval won't cure dead birds.

Agents—C. H. Werdig, Sebastopol; Geo. P. McNear, Petaluma; Riverside Poultry Co., Riverside; J. A. Reinhart, Hollister; H. W. Thielsen, Oregon; A. W. Huskins, 713 Waterloo St., Los Angeles.

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Mammoth Bronze Turkeys

An extra choice assortment of toms and hens from my best matings. Large bone, long body, full-breasted, well-marked birds which are strong and vigorous, from the best strains in the East. Prices reasonable. GEO. A. SMITH, Corcoran, Cal.

All Metal Incubators and Brooders

SIMPLE — DURABLE — SAFE

The result of 25 years experience, and the most Practical Incubator made.

FIRELESS BROODERS THE KIND THAT RAISE THE CHICKS

Cycle Hatchers, $6.50. Brooder Hatchers, $8.50

THE PHILO SYSTEM

READ WHAT OTHERS SAY:

117 Miles Ave., Oakland, Cal., Nov. 12, 1910.
CYCLE HATCHER CO., Oakland, Cal.

Gentlemen: A year ago we started with the Philo System, and raised as fine a lot of White Orpington pullets as anyone would wish to see. The two machines we purchased of you last season have given excellent satisfaction. We shall probably need more this year, and shall use the CYCLE machines in preference to a large incubator. Truly, S. N. HAINES.

Send for "Poultry Profits." Mailed on request.

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Odd tracts and ranches of all sizes.
Weekly parties arranged by us. Rates are less in this way.
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700 Union Trust Building LOS ANGELES, CAL.

Bees and Their Care

WINTERING BACK EAST.

Much interest was shown in the following paper read at the last Los Angeles County Beekeepers Club, by Mrs. H. G. Acklin of Glendora. It has but little of California methods, but shows necessary work of Eastern beekeepers of which the Californian knows nothing:

* * *

I do not intend to draw comparisons, as all beekeepers here know the methods used in this state; but simply tell you how the wintering problem is met in some other states.

In Minnesota, and all through that section, if wintering could be successfully and with a certainty coped with, I believe a happier lot of people would be hard to find than the beekeepers of that region. There are many women beekeepers and that is possible; as bees are kept right at home. My queen-raising apiary was in the back yard and we lived on the corner of two busy streets.

Foul brood has done considerable damage in the past few years, but even that dread disease can be successfully met and disposed of, while the uncertainty of wintering is always confronting the beekeeper. Many people try bees for a year or two, but are unsuccessful in wintering, so give them up forevermore, thoroughly discouraged with the business, all on account of the wintering problem.

Very few bees change hands in the fall, although the price is much less at that time, because of this wintering uncertainty. I never advised a beginner to buy bees in the fall, although we always had bees to sell.

We wintered bees in three ways and finally, after much experimenting and some heavy losses, succeeded in getting them through nearly all right. A cave at the Snelling apiary took the lead for certainty, as we had not lost a colony there for several years before I left. But the young man who bought that apiary lost nearly all of his bees the next winter.

The next best way was in the cellar under our dwelling house, which held about 300 colonies, but was not as dry as the cave. Here we removed covers and put on quilts and tiered the hives up at a slant so the dead bees could be rolled out of the entrance. At the cave both bottom and cover were left on. The colonies put in this cellar nearly all died the winter after I left, while we had been wintering there with scarcely a loss for several years.

Another way was winter packing outside. We had 10-frame, two-story tenement hives, four colonies in each hive. That, of course, left only two outside walls for each colony. And then the colonies on the northeast corners would succumb to the cold some winters. But outdoor wintering in chaff hives or chaff packed winter cases is practiced successfully in many sections, especially in states just south of Minnesota and the Dakotas.

I have known men who brought their bees through in good condition by placing them in trenches. That is, digging long, narrow ditches in the ground and filling the bottom with straw or leaves and placing boards on that and setting the hives on the boards, after which straw is placed on the hives and the whole thing cased in with soil. I know nothing of that method from experience, as it never looked feasible.

Occasionally the chaff packed bees outside would get a flight duing a warm spell, but many were lost in the snow. Taken one year with another the bees wintered in the cellar and cave came out in spring just as strong as the ones outside, while the latter always consumed more honey.

The weather regulates as to the time bees are put in winter quarters. Any time from Nov. 10th on, if the fall weather is fine. They are taken out usually the first part of April, but sometimes the last of March if the weather is especially fine. I have seen the hives covered completely with snow as late as May and many times in April. As the sun is apt to come out bright and warm after one of those snowstorms, it is always best to take the snow out of the apiary, so the bees will not alight on it and get chilled.

We brought some of the out-apiaries home to winter, as we did not have wintering facilities at all the out-yards. In preparing for winter every colony was weighed and from 35 to 50 lbs. of honey allowed for wintering, according to the strength of the colony.

The best time to take bees from the cellar is about dusk, so they get accustomed to the outside air during the night and come out of their hives gradually as the morning advances. Many times I have asked neighbors all around us not to put out washings on the days the bees were set out, as they spot badly during their first flight. Honey invariably found its way to those homes later.

There is considerable cleaning up to be done in the spring when bees have wintered well; but when losses have been heavy and dysentery prevalent, I would almost rather do anything else than clean up such an apiary. The whole outfit gets into a very filthy condition, especially the combs.

In favorable seasons we had almost a continued honey flow from the time bees were set out in spring till frost. First came the soft maple and willows which were succeeded by fruit bloom and dandelions and by the time the main flow came, which is white clover, usually about the 10th of June, bees were in prime condition for storing honey, and swarming, too, for that matter.

Before the white clover was gone yellow sweet clover blossomed and shortly after that another main flow for those who live in the basswood section. White sweet clover comes along very soon after the basswood bloom and lasts till frost. There is also a variety of fall flowers, such as goldenrod, asters, Spanish needle, etc., from which an amber honey is produced.

When through with the last extracting we put our combs into hive bodies or extracting supers and tiered them up outside for the bees to clean off; after which they were stored in moth-proof boxes and left for Jack Frost to do his part. After passing through one winter combs will keep indefinitely, provided the receptacles in which they are placed are moth-proof.

FACTS ABOUT THE GREAT
OWENS RIVER VALLEY

In presenting to a California farmer, the many virtues of Owens Valley, my position is made awkward by the fact that I am in the real estate business, and that you, as a farmer, have read hundreds of advertisements of new lands, depicting the most remarkable conditions; probably have investigated several of them, only to find that the actual property being offered was far from what was described and the pictures used to interest you had been taken at some remote spot and had no bearing upon the property you were investigating. The result is that the more I say about the wonderful virtues of the Owens Valley, the more I am convicted of juggling with the truth.

Probably the most convincing argument I can use, is, of the many things I am about to tell you of the Valley, that if they are not true, word for word, I will pay your expenses for the trip, both ways, plus $5.00 per day for your time and, on top of that, buy you a new hat.

First, I will give you my opinion and observations of the Valley. I am a practical farmer, have raised deciduous fruit, alfalfa, corn, sugar beets, cauliflower, cabbages and potatoes on very large acreage. I am a student of farming, have studied soil conditions thoroughly, irrigation, fertilization and climatic conditions. I firmly believe that I am capable of passing an intelligent opinion on the virtues or shortcomings of any farming territory, which I have had the opportunity to investigate.

It is my firm conviction that the Owens Valley is so far ahead of any other farming community in California, that there is hardly a comparison to make. The only thing that I am at a loss to explain, is the direct reason for this condition. Whether it be the deep granite soil, or the abundance of pure, mountain water, or the total absence of fog, or the perpetual sunshine, or the high elevation, or whether it is a combination of all these conditions, I am at a loss to say. Nevertheless, the conditions are, that apples, pears, alfalfa, potatoes, corn, onions, and honey are produced in quantity and quality beyond belief. All these remarkable conditions are apparent to the observer, on top of the fact that there is no evidence of what you might call modern methods of farming. We know that the great corn belt of the Middle West has been brought up to a standard of from 70 to 90 bushels of corn to the acre, after years of educational work by the Department of Agriculture, Farmers Institute trains and state colleges; that seed has been distributed and lectures given, to improve the farmer in his raising of corn—and although not one of these advantages have been offered to the Owens Valley farmer, the corn they are producing today, both in quantity and quality, very nearly equals the best corn grown in America. I firmly expect to see 100 bushels of corn per acre taken from the Owens Valley in the next few years.

We know that in Greeley, Colorado, and in some European points, they have grown as high as 500 bushels of potatoes to the acre, with an average of about 330, but this has been accomplished only after the most scientific and modern methods of cultivation. Such methods are unheard of in the Owens Valley, but in spite of this, we find the same result in quantity—and the quality not to be excelled. I personally saw a potato field this summer, that when I looked at it, appeared to contain nothing but weeds, but when harvested, ran 330 bushels to the acre.

It was my good fortune to have with me, on one of my trips, an apple grower from the Rogue River Valley (Oregon), who had spent 23 years developing commercial orchards in that famous section. We were fortunate in being in the Valley at harvest time. He made the statement that he never saw finer apples in Oregon than were then on the trees—and that the remarkable thing was that the evidence of total lack of modern culture, both in the way of pruning, spraying and cultivating, was so marked, that should an Oregon orchard be left to get into such a condition, that the apples would be next to worthless. He surprised me by telling me that the Owens Valley possessed all the favorable conditions for raising apples that Oregon did, on top of the fact that the soil conditions were far superior.

Probably the one condition surrounding this remarkable territory which needs more publicity than any other, is telling the farmer of the true climatic conditions. There seems to be a prevailing opinion that the summers are very hot and the winters very cold. This is all wrong. The Owens Valley has, without doubt, (excepting the seacoast towns), the most ideal summer climate in all California. While there is sufficient warmth to assure a vigorous growth, they have no depressingly hot days—proven by the weather reports which are on file in this office and which will be forwarded to you upon application. Although they have an occasional snow in winter and, of course,more cold weather and frost than we have in Southern California, there is only a difference of about 10 degrees in the winter climate, and that, with the exception of last year, which was an unusual year throughout the entire country there is never a day that you cannot plow. It is a common remark among the farmers there that after 9 o'clock in the morning they work in their shirt sleeves the entire winter. They do acknowledge, however, that to get up early and feed the stock, one needs to be warmly clad.

It is my firm opinion that the resources of the Owens Valley have not been discovered. I have personally found celery that was as fine as any I ever saw. I have heard of the remarkable qualities of fancy table grapes, currants, gooseberries and cherries, that were as superior as anything grown in America. It is my firm belief that within the next five years, Owens Valley will be known as the garden spot of California and the lands with good water rights will be commanding the highest prices of any agricultural lands in this state.

I believe that you will agree with me that the time must come when we will arrive at the value of farm lands as we would a piece of close-in business property in a large city, namely, that its value is contingent upon its earning ability, and that land that will grow 400 bushels of potatoes to the acre, should be worth four times as much as land that will grow 100 bushels, for we know the same amount of labor is expended upon both.

You, who have raised citrus fruits and have paid your good, hard cash for commercial fertilizer, know exactly the value of lands that are rich in phosphoric acid, nitrogen and potash.

Although our regular terms are ¼ cash, balance in three equal annual installments, less than one-half of our sales have been made according to these terms—and to the good, serious, honest, thrifty farmer, who wants to get on to our property and develop his little piece of land, we are always ready to co-operate with him, in modifying our terms to permit him to accomplish his object. We, however, will not encourage any man whom we feel is not able to make a success. I firmly believe that the man who has enough money to get established on the land, that his crops will produce each year, many times the amount of money he may owe on his property. Of course, we cannot guarantee this, as there are some men who could not make a living on 1,000 acres.

If you have any idea of making a change—and what I have said interests you sufficiently to feel that you would like to live in the Owens Valley, I want you to cut out the attached coupon and mail it today. I will send you a complete assortment of pictures, descriptions and maps, that will tell the story as vividly as I am able to express it.

I realize that the best way of carrying the good news to the farmers of California, is through a personal interview, by a thorough farmer who has seen and knows the Valley. I am looking for good representatives in every community. I do not want the regular stem-winder real estate man. I would rather have a thorough farmer.

JAMES R. H. WAGNER.

…………………… CUT OFF ON THIS LINE ……………………

James R. H. Wagner and H. S. Cook,
239 S. Hill St., Room 13.
LOS ANGELES, CAL.

Kindly send, without expense to me, book on Owens River Valley.

Name……………………………………
Town……………………………………
County……………………………………
State……………………………………

Irrigation and Forestry

A PRACTICAL EXPERIMENT.

When the Country Life Commission of the state of Washington, appointed recently by Governor Marion E. Hay, meets in Spokane the week of November 14, plans will be presented for a model community center and consolidated country school, to be established in one of the rural districts adjoining Spokane, early in 1911.

David Brown of Spokane, chairman of the commission, announces that Governor Hay and possibly Colonel Theodore Roosevelt will attend the conference and assist in formulating a practical plan for the betterment of life on the farm, along the lines suggested in the report of the Roosevelt Commission on Country Life, which, headed by Professor Liberty Hyde Bailey of Ithaca, N. Y., made a tour of the larger farming districts of the United States the latter part of 1908 and early in 1909.

This is to be the preliminary step of a nation-wide movement, co-operative with the various states and territories, in an endeavor to teach the youth of the land the fundamental principles of agricultural and domestic economy and manual and industrial training, also giving the farmers in the communities the benefit of the most approved methods of agriculture and allied subjects. The community center is designed to furnish a place where men and women can meet for the interchange of ideas.

Primarily, the school is for the average boy and girl, whose institutional education ends even before they finish the secondary school, the purpose being to train them to become useful men and women and capable of supporting themselves, and thus adding to the wealth production of the country at large and the districts in which they live and to better their condition of life.

The Washington commission has prepared tentative plans for a community center, including a consolidated rural school. It is designed to cover 10 acres and will serve a school area of 36 square miles, the most distant point being three miles. In addition to the school building the plans show a large community hall, residence for the principal and supervisor, athletic and play-grounds, tennis court, pressure water tanks for domestic, lawn, irrigation, stock and fire uses and plots for the practice of agriculture, horticulture, floriculture and forestry. Surrounding and bisecting the tracts will be models of good road building.

The school and other buildings will be under the direction of a principal, trained in the various branches of agriculture and familiar with conditions in the Northwest. This official will be assisted by a supervisor and a corps of teachers. In connection with the community hall will be a bureau of information, containing all the available data of federal and state departments of agriculture and experimental stations in the country, also books and journals dealing with all the branches of the industry.

The community center is to be made beautiful with trees, shrubs, flowers and lawns without being ornate, and no saloon, store or other commercial institution can be located within half a mile of its boundaries. The teachers will be men and women with red blood in their veins and able to adapt themselves to the ideals of the center and school of the type outlined. Among other qualifications they much be broadminded and optimistic and able to see the human side of life, also be helpful to those under their charge.

The keynote is that the best defense against misfortune is to give every child in the country such education as will enable it to make its own living on a piece of land, if necessary, when it becomes of age. It is purposed to launch a campaign, urging the people of the open country to work together, not merely with the view to forwarding their own economic interests or in competing with those who are organized, but to develop themselves and establish an effective community spirit.

The consolidated rural school will be similar to the graded city institution, the betterment of the curriculum being by emphasizing industrial and manual training and domestic science and adding such other studies as will give the students a knowledge of things with which they come into contact in actual life and presenting means of working out the chief studies in practice. It is also purposed to teach the students the principles of business. However, the value of agriculture as the greatest of all industries will be constantly kept to the fore.

"This may be termed a 'back to the farm' movement, the necessity of which is becoming more apparent every day," said Mr. Brown. "We need more men and women on the farms; in fact, it would be better for the nation's prosperity if 65 per cent, instead of 33 per cent of the population, as at present, were tilling the soil, milking cows and setting hens. The open country, however, is not the solution of the out-of-work problem, for, unless instructed in some branch of agriculture and keenly interested in the work, the average man is worse off in the country than in the thronged city.

"This takes the Spokane plan to the first principle, that the child should be educated along practical lines, and to bring this about the country school much be made a new kind of institution. The rural schools are held by some to be largely responsible for ineffective farming, the general lack of ideals and the rapid drifting from the country to city. The rural schools are not declining; they are simply in a state of arrested development and have not kept pace with the changed conditions of life.

"We believe the movement will meet with favor not only in the rural districts but also in the cities, as every citizen must be interested in the enlargement of the country's agricultural resources and maintaining the nation's growth. This means the full development of the farm as expressive of all the social and economic forces that make for the welfare of the farmer, the real backbone of the nation, and those in other lines of endeavor who are dependent upon his successes."

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LIME-SULPHUR
SOLUTION

Our solution is so strong that we have had to discard the oak barrels, and now use steel drums. It tests higher than any other solution manufactured in the world: 36 degrees Baume; or 15 per cent stronger than any other solution made.

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WATSONVILLE, CALIFORNIA.

☞ *Southern California Distributors:*
Braun Chemical Company, Los Angeles

Queries and Replies

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

No Indication of Tuberculosis.

Please tell me is it a fact that three teats on a cow is a sure indication of tuberculosis?—Subscriber, Imperial.

We never heard of any such claim and fail to see where it could be the faintest indication of such disease. We have heard of excellent cows which were so afflicted and lived to old age and were good producers.

Pasture.

I have recently bought small ranch having alfalfa lot used as pasture. Can be irrigated from flowing wells. Pasture has been over-stocked and needs plowing. Will rye make good pasture?—Subscriber, San Bernardino.

It is always a little hard to advise any one from merely hearing their plans. I have no doubt you are studying and planning out the best way possible. Wheat, barley and rye are all in use here for a fresh quick bit for the cows. If they are all planted at the same time the rye will come first then the barley and then the wheat. In speaking of the pastures being plowed up, I wonder what is being sowed on them? Here in the San Joaquin we would sow them with barley, first plowing the land ten inches deep, then harrowing well and then drilling in the barley, then on top of that we would put alfalfa seed on covering it lightly. Eighty pounds of barley and ten of alfalfa will give a heavy crop of barley hay and a thick stand of alfalfa. The land that alfalfa is on is land that can be irrigated during the summer time. The alfalfa seeding may be considered too light but it is not if the land is well cultivated and the seed not buried by covering too deep. When rye and barley is to be pastured, it had best be sown alone for the tramping is bad for the young alfalfa plants and then too the cattle will pull it up as they will graze it off before they touch the barley or rye. The neighbors will be glad to advise about the customs of the country and it is safe to follow these for most of the land. Then try out new or personal ideas on a small scale to demonstrate their utility without being a financial drain if not successful.—M. E. S.

Mealy Bug.

I send lemons infested with scale. What is it and what is the proper remedy? Resin wash does not kill them.—Subscriber, Pacific Beach.

We regret very much to inform our subscriber that he has a bad infestation of mealy bug, one of the worst pests of citrus orchards. Next week's Cultivator will have an article by Horticultural Commissioner Essig of Ventura county on this pest. He has tried a great number of treatments, securing best results with fumigation, but at a prohibitive price as continuous treatment is necessary costing two or three dollars a tree or even more. This compelled him to turn to sprays and he has found that the carbolic acid emulsion gives the best results. The treatment will be given with details of mixing and applying.

Guinea Eggs.

Where can I secure guinea eggs for hatching; also Indian Runner Ducks, either gray or white?—Mrs. E. D. Starks, Imperial.

We give the subscriber's name in full and any who can supply her should send particulars. Further, we may add that we have constant inquiry at this office as to where guinea eggs may be secured and this indicates a good line of advertising for those who have them.

Cypress Hedge.

I have cypress hedge which is gradually dying out. It is not from lack of water as irrigating ditch passes trees. Is it because of too much water? How often should hedge be trimmed? How often should it be irrigated where ditch does not supply almost continual water?—W., Los Angeles.

We presume our subscriber means the Monterey cypress. It is a forest tree and while it will stand severe pruning for a few years, ultimately it rebels and dies out in spots. We have seen it grown where it had almost no water and where it had continuous water, and the dying out has been invariable. In fact, the tree when allowed to grow to its natural height—and it is a tall tree—is not particularly long lived. When young and vigorous it is one of our handsomest hedge plants, but we do not think there is any possibility of saving a hedge which is beginning to die.

Tapping Water Pipe.

A has a water pipe line (private) which crosses B's land, the same laid when B's land was a government claim. Has B the right to tap this pipe for domestic purposes, and if so, how much or what proportion can he take?—A. B. C.

B has no right to tap A's pipe line. —E. L. P.

Fencing Highway.

Please let me know through your paper if all or a portion of a sidewalk on a country road can be fenced in and used. The sidewalk never has been used as such, but farmed by adjoining property owner. —J. H., Sespe.

No part of the highway should be fenced. If your property line is outside of the sidewalk and the public has not acquired an easement by reason of long and continuous use, you might fence.—E. L. P.

Moving Irrigating Ditch.

Can I be compelled to move irrigating ditch which has been in use over five years? Ditch was constructed along high line side of my holdings according to Imperial Land Company's survey which is the basis upon which practically all our claims are adjusted. The government now moves our line 12 rods.—J. W., Brawley.

The inquirer does not state whether the irrigating ditch is left on his premises, or by the change is left on some one's else property, but I cannot conceive of any combination of circumstances short of an understanding with the party upon whose land the ditch is, which would compel the removal of the ditch. It might be that the inquirer would be obliged to make a new ditch in order

☞ WATCH THIS SPACE NEXT WEEK.

SAMPLES NOW READY

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WALNUTS

One has been tested 12 years, and the other 18 years, and neither has ever shown any signs of blight. Both trees are good bearers of the very best commercial nuts. Fullest investigation desired, and visit to original bearing orchards recommended. Orders should be placed early. Fuller particulars by mail.

See our new catalogue and, for 15c you may have a 1911 calendar, amusing, entertaining and full of useful horticultural information.

Leonard Coates Nursery Co. (INC.)

MORGANHILL, CAL.

The only Orchard and Vineyard Harness that satisffes every one.

PRICE, $17.50

Write for circular.

The H. C. Shaw Co.
Stockton, Cal.

SEED GRAIN *BLACK AND RED OATS, WHEAT, BARLEY. BEAN SCREENINGS*

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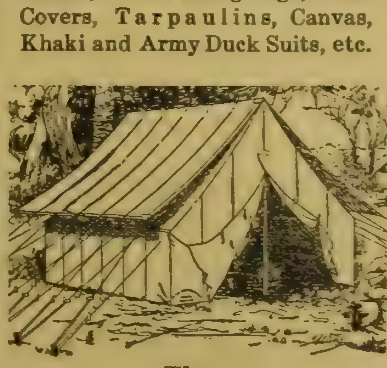

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The material, workmanship, principle and general efficiency in construction of Star Drilling Machines, guarantees you against senseless repair bills and useless losses. That is one feature. Let us tell you more about them. All about the Star Drilling Machines, Engines, Cordage, etc.

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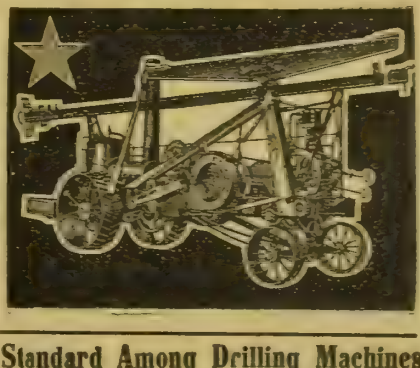

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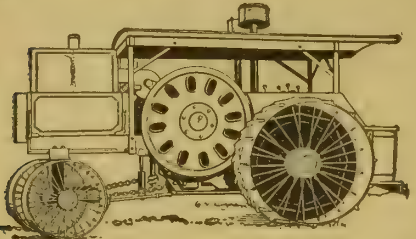

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Florida Sour Seed

Put in your orders for Florida sour orange seed before the first of the year and be sure of getting your seed. We are collecting personally our own seed. A deposit of 1-3 required. Address **OTIS E. HYDE, 1314 West 51st St., Los Angeles.**

to obtain water if the old ditch is now on some one's else land and that party refuses to permit access to it. The solution of that question, however, would depend upon many facts which are not stated by the questioner.—E. L. P.

Use Teat Plug.

My cow has sore on end of one teat, extending up into it a little way. There is also small lump in same section of udder. I have to open teat with quill night and morning and then can hardly milk.—R. J. R., Lindsay.

I would insert a greased wooden plug into this teat. You can cut one with a knife and make it very smooth and blunt, about the same size all the way and at the end make a head with a rim around which a piece of cloth can be used as a string to hold it in place. Now if you will take half a clothes pin for this stick to cut you will find it easy to make. Grease the plug well with vaseline and then bathe the sore with warm water, soaking off the scabs, and grease it well with vaseline. Insert the plug and use a strip of cheese cloth about an inch wide to tie to it. Tie it in the middle of the strip of cheese cloth. Insert the plug which is long enough only to reach past the sore spot. Then bind the pieces of cheese cloth around the teat, covering it completely, and tie the ends in a neat bow knot. Each day before milking wash the teat in hot water and again after milking before putting in the plug. After the actual soreness passes, dry it up with subnitrate of bismuth powdered on it. A milking tube should be used for milking this teat in order that as little pressure as possible is put on the tender spot. The lump in the udder I think you will find has been caused by not getting all the milk away from this quarter. I would gently work this with my hands until I could reduce, using hot water over it and then using vaseline until it was gone. The use of a milking tube will help this probably in that it will remove the milk clean. Sometimes it is necessary to paint these lumps for three days with iodine and then leave for three days and repeat if not entirely absorbed in that time.

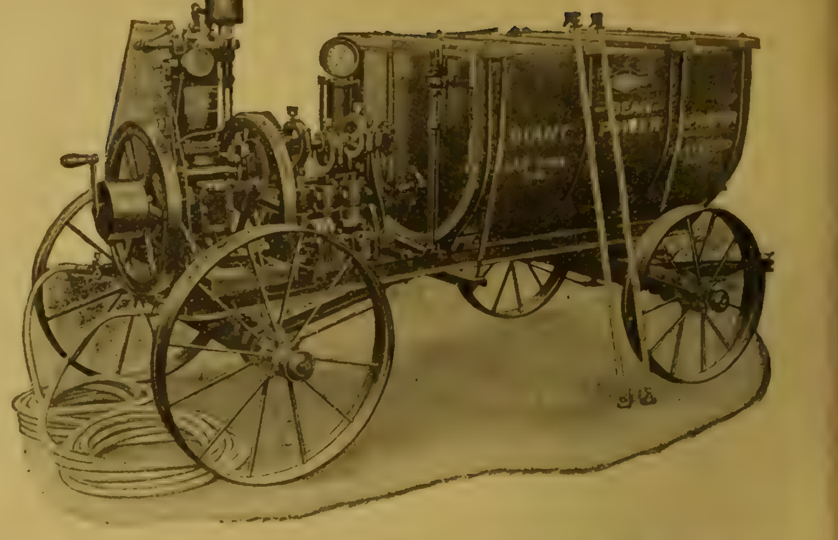
If you cannot secure a milking tube, by sending a dollar to O. J. Weber Co., Los Angeles, they will mail you one. They also will send you a lead teat plug that is useful to have in these cases. You will find their advertisement in the Cultivator.—M. E. S.

To Remove Wart.

Is there any remedy for wart or large soft growth on cow's teat? I have a cow with such a growth, and it hinders correct milking.—Subscriber.

Wash the teats clean and then use castor oil on the wart each time after milking. This seems the simplest way to remove warts from any tender tissue. Butter of antimony is sometimes used but it is poisonous and if the cow licks it or a calf sucks at the teats it may do mischief to the digestion of the animal.—M. E. S.

Wool growers of the Northwest will mke a strong fight at the Wool Growers' Convention which will meet in Portland in January to secure less stringent regulations in forest reserve pasturing.



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________________1910

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NAME	P. O. ADDRESS	STATE

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SONOMA COUNTY FROM A BIKE.

By Nat. E. Luce.

Yes, Sonoma is a county to be reckoned with. She is great agriculturally. Her agricultural lands lie in the western part of the county from Petaluma and Sonoma on the south to Cloverdale on the north. Of course Petaluma is known the country over as the greatest poultry center in the world and after one has been through the district, he can well believe without a doubt that it is what is claimed—the largest any where. They not only raise hundreds on individual ranches but thousands. Large numbers of ranches run from two to four thousand head. Then there are many hatcheries that hatch baby chicks by the thousands. The poultry raisers there do not pursue haphazard methods but go at it in a scientific and business like way, thereby making a complete success.

East of Petaluma about fourteen miles is the Sonoma Valley running from Schellville through Sonoma and around to Santa Rosa. This little valley of Sonoma is rich though small, with wonderful vineyards and splendid orchards and now they are finding that English walnuts do splendidly there, the bottom lands are warm and rich and produce everything in abundance without irrigation. Have seen and eaten grand melons there and corn does well on the bottom lands. North of Petaluma is Santa Rosa the county seat of Sonoma county. Round about Santa Rosa is a large area of splendid farming land. Here is the home of Luther Burbank.

Santa Rosa's products are largely diversified as shown by hops, grain, dairying grape growing and deciduous fruits. All have their places on the ranches and many small ranches are now being taken up and small fruits and poultry are the main item on these places.

West of Santa Rosa six miles lies the well known town of Sebastopol famous for its wonderful apple district. This apple belt lies on what is known as the Gold Ridge. The soil and climate about this district seems to be especially adapted to the growing of the very finest quality of apples as can be attested by their record at the Watsonville apple show. The soil is a sandy loam. The trees look vigorous, clean and healthy. It is also a great berry grower. Hundreds of acres are devoted to this industry, with large flocks of poultry on nearly every ranch.

One criticism I wish to make about the Petaluma and Sebastopol districts, they tolerate poor roads. If they could only get the inspiration of the gospel of good roads, good and hard, it certainly would appeal to the stranger coming into those sections. To my knowledge four good sales were lost in these sections lately because of poor roads. It most certainly behooves the citizens to get busy and do something toward bringing about a general movement for better roadways.

North of Santa Rosa is the Healdsburg district, about which lies some of the finest lands one could wish. The Russian river section south of Healdsburg to Forestville is also a most productive territory, with beautiful ranches under a high state of cultivation.

Corn, yes corn! I saw a six acre field on the Darby ranch about three and a half miles south of Healdsburg that would average at least ten feet in height. I walked through trying to realize that I was in California instead of back in the corn belt of the middle west. Ears of corn 18, 20 and 22 inches round were the rule. While not as long ears as one would see back east they would rank as extra good anywhere.

Many splendid hop yards and beautiful prune orchards are seen on every hand and large dairy herds of blooded cows were also in evidence. The lands are a dark, rich loam, easily worked and wonderfully productive.

The Dry Creek Valley to the northwest is another splendid body of land, and as one rancher put it, its only fault is there is not enough of it. Good roads prevail. One early morning I came to a place where I had to dismount and walk around a new concrete bridge which was under construction. It is under the supervision of road superintendent H. A. Hall, for that district. He said that the people in that valley were awakening to the fact that good roads and good bridges are a valuable asset to any community and that they were trying to keep up the crusade for not only good roads but the best they could make.

Take the Healdsburg district as far north as Geyserville and the Alexander Valley, the writer does not believe there is a richer section of farming land anywhere. This district produces exceptionally fine prunes. Good roads are the rule in the north part of the county and it was a pleasure to travel through it and visit the ranchers of a section where they are awake to their own interests.

On the Rasor ranch at Geyserville I saw dried peaches that would be classed as extra fancy in any market. As might be imagined very few ranches are for sale and those at good stiff prices. Many of these ranches have turned off two to four hundred dollars per acre this season, and one man said he had offered his ranch at a price on which he had received twenty per cent.

From Geyserville to Cloverdale is the great Italian-Swiss vineyard colony section where thousands of acres of rolling foothill land is given to the growing of wine grapes. Cloverdale is the live little town at the extreme north of the valley and in a sheltered, fertile spot. Here oranges are grown and the enterprising ranchers have built a large building of concrete in which a citrus fair is held each season in February. I saw many fine groves ranging from one to ten acres. Trees are healthy and practically free from scale, with their loads of fine fruits turning to gold.

All in all Sonoma is a great county. A few figures may help one to realize something of its magnitude. Poultry and eggs has two millions of dollars to its credit; butter and cheese nearly three quarters of a million dollars, wine two and a half million dollars, hops three-quarters of a million berries seventy-five thousand dollars, fruits three-quarters of a million.

Great is Sonoma.

WORK FOR THE GRANGE.

The grange can force the battle for the farmer. It must meet the conditions that arise, with intelligence and strength. Better financial conditions for the farmer mean better homes, happier families and a greater love of the farm. By reason of its strength the grange has added responsibilities which it must assume and carry through to success. It has an opportunity no other organization ever had to build for the future. The great agricultural interests look to the grange to represent them in the legislature, before congress and in the executive mansion .

The grange has an equal duty to perform in the town, in safe-guarding the farmers' interests there. The business side of the grange is assuming important proportions. The grange is not only a social and literary club, it also reaches out and is intimately connected with the business interests of the farmer. It stands for education of the young—whether of the farm or other calling. —Santa Rosa Republican.

This season's Arizona oranges and dates have sold at fancy prices in Chicago.

The University of Idaho at Moscow has adopted the "Wisconsin idea" and will conduct movable schools of agriculture.

Utah claims that with her magnificent grazing possibilities she is the peer of any state for dairying.

Utah dry farmers report ideal fall conditions.

Maricopa county, Arizona, made one shipment of six cars of early oranges.

Twenty farmers of lower Eureka flats near Walla Walla, Washington, are forming an incorporation with $100,000 capital to irrigate 20,000 acres of land.

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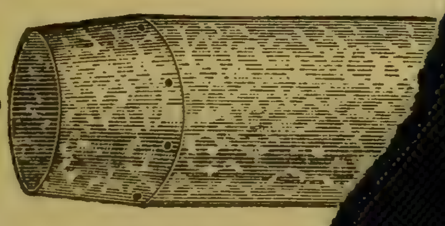

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General Agriculture

ALFALFA ON THE DRY RANCH.

The art of raising alfalfa without irrigation is to accumulate sufficient moisture in the subsoil and then get the roots down into it. Two to three feet of moisture will carry the alfalfa a whole year and insure a stand whether it rains or not. By plowing in the fall 10 inches deep we can usually conserve this amount of moisture by springtime. But for those who plow only six or seven inches deep it is better to fallow the land a whole year.

Dry year plowing in the fall is not detrimental, provided the ground is not planted until spring. The tilth of the soil at time of plowing matters nothing, but at time of planting it matters everything.

The best time to plant is usually about the 20th of April. Late planting is dangerous for all small seeds which have to be planted near the surface, for in hot weather the top inch or two dies out very quickly, and if the seeds sprout and the next rain is too long in coming the whole stand may die out before the rootlets can reach the wet dirt down below.

It can be seeded broadcast by hand or drilled, but the solid wheel drill is not as good for the purpose as the split wheel, which I am glad to see they are commencing to manufacture for all purposes. The split wheel leaves an unpacked streak in the seed row for the young sprouts to come through and obviates the necessity of forcing their way through a crust, which is a great advantage when the rains are few and far between. Ten pounds to the acre is a good amount to plant.

In 1908 we had two feet four inches of moist soil to start with. We plant-April 15th; a soft snow May 4 brought it up, a light rain May 15th helped it along, then it turned dry and did not rain again until July 29, a total of 10 weeks' douth. The alfalfa grew about six inches high, and we had a fine stand. We cut, weeds and all, in August, leaving it on the ground.

Alfalfa can be planted in rows and cultivated as often as necessary, but when planted in the ordinary way it can be cultivated four times in the season, which is as often as the general run of farmers will cultivate anything. The first year it can be lightly harrowed in the fall or if not very large it can be left alone, for if it lives until August it will hold its own anyway. The next spring it can be harrowed, before sprouting and after each cutting. After the second year the disk may be used, cutting deep or shallow, according to the size of the plants.

Farmers sometimes complain that
r a year or two their alfalfa dies
There are two reasons for this.
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into it. The alfalfa is living from hand to mouth and the first dry winter knocks it out.

It is the same with any crop. The normal length of the roots of small grain, for instance, is somewhere about four feet, but if a man who never conserves moisture plows only six inches, his subsoil is bound to be dry, the roots do not go into it and he is trying to grow a four-foot root in a six-inch space.—Dry Farming Congress Bulletin.

TO KILL OR PREVENT WEEVILS IN CORN AND PEAS.

While we have printed this remedy several times, we must print it again, for we are almost daily getting letters asking for the recipe. The best method known is to use carbon bisulphide. This is a liquid but is sold by the liquid pound. One pound is sufficient for 75 bushels of corn. You must have an air-tight crib or bin, else you must have a large cloth sheet sufficient to cover the pile of corn to be treated. The carbon bisulphide is placed on top of the pile of corn in an open vessel. It is very volatile, and the fumes flowing from it as it evaporates are heavier than the air and poisonous to the weevil. These fumes will settle down through the corn and kill the weevil. After the carbon bisulphide has evaporated, you lift your sheet or open your tight crib or bin, and the air soon dispels all fumes,, your weevils are all dead and your corn perfectly healthy to feed or eat. The exposure to the air will remove all danger in feeding. This has been tried and is a sure and safe remedy.

Care must be taken not to bring a lighted lantern or match about the fumes for the first day or so, as they are explosive.—Southern Cultivator.

A CURE FOR ALKALI.

Almost all soil contains more or less alkali. Whenever the soil strata is such that there is no natural drainage, and water is applied to the surface it generally collects in the basin, the surface of the underground water gradually rises, and when it gets near the surface, excessive evaporation occurs and as the moisture passes away as pure water the salts contained in the water are left at the surface of the ground. In due time the soil takes on a white appearance and vegetation suffers.

Naturally, the cure for this condition is to lower the water table, and if there is no natural drainage, this must be done by artificial drainage. Anything that will provide a channel through which the underground water may get away will answer the purpose.

In many cases tile have proved to be unsatisfactory. Both cement tile and some burned clay tile have shown the effect of alkali, and there are instances where each has disintegrated and gone to pieces in a few years.

The open-bottomed wooden box seems to last as well as anything, and there are instances where these have been in service for eighteen years and the wood is still sound. Wood kept absolutely dry will last indefinitely, and wood kept soaked will also last indefinitely. There are instances where piles have been driven and kept continually covered with water. After centuries of time these piles have been removed and found to be as sound as they were the day they were driven.

A wooden pipe or box used for a drain is surrounded by moist earth and water continually runs through it, so it is saturated, and therefore has a long life under these conditions.

Get a good engineer to plan and lay out your drain for you and it is necessary for him to make an examination of the subsurface soil as well as of the surface soil in order to intelligently place the drain.

This is a common statement: "My ground will not drain, for I have tried it." If an investigation is made, however, nine times out of ten it will be found that the drain is an open drain, the banks have caved and choked the channel, the weeds have been allowed to grown in it. Of course, it won't work under these conditions.

Wooden boxes are easier to lay and lay properly than tile, for the sections are longer and there is less danger of tilting and choking the channel. Remember, however, that in all cases careful work must be done if the drain is to be a success. It is not an exaggeration to say that all land can be drained if the system is properly planned and the work properly done, and this is the permanent cure for alkali.—Journal of Agriculture.

TAKING CARE OF THE ALFALFA.

Alfalfa is essentially a deep-rooted plant and produces the maximum yield only when the roots can be maintained in healthy condition to the depth of at least four or five feet in a fertile, well-drained soil. In a few localities here in the west our soils are relatively shallow, being underlaid at from 18 inches to two and one-half feet by gypsum or rock. At present it does not appear that this class of land can be expected to yield the maximum in hay, although the average yield seems to be as good if not better on this class of land. However, plant life is full of surprises to us and alfalfa is a remarkably adaptable plant. In the past few years a number of our farmers have realized the importance of available fertilizers to increase their alfalfa yields and in a few instances the value of either top dressing or plowing under barnyard manure has been proved beyond question by bountiful increase in the yield.

One example with which I am personally familiar will suffice to show the value of manuring. Early in October, 1907, we prepared five acres of raw land. After clearing, plowing and leveling we irrigated and spread 100 loads of barnyard manure. This was turned under at once, a fine seed bed prepared and 12 pounds of seed to the acre was sown with a press drill. A hard rain followed quickly and so packed the ground that a poor stand resulted. As soon as dry enough we harrowed and sowed more seed broadcast. We were preparing to irrigate when another rain storm saved the trouble of irrigating. A first-class stand of alfalfa resulted. During the following season we cut three times after an early clipping and we cut 4.2 tons of hay from each acre which was baled in the field and weighed immediately. In the fall we plowed up half of this alfalfa to plant to grain and other annual crops as an experiment on fertilized ground. I will say in passing that oats and wheat raised on this land proved the only good grain crops we had on the place.

During last season we cut the remaining two and a half acres of alfalfa five times, the total weight of stackable hay amounting to a little over 17 tons. Alfalfa hay in the stack shrinks 25 per cent in 60 days, after which time there is no appreciable loss. Taking account of the loss this alfalfa patch yielded 5¼ tons of hay to the acre, which could be sold in the winter when the maximum price prevails. During the first season it was attacked to a very limited extent by root fungus. It was irrigated usually in the day time when there is the greatest danger from scalding and thus weakening the plant when it becomes an easy victim to the fungus.

Let us take care of the alfalfa field. We must not lose sight of the very apparent fact that it is much more profitable to grow 50 to 60 tons on 10 acres of land than it is to grow 40 tons on 20 acres. In shipping alfalfa in the bale we cannot afford to permanently rob the land of that which we have taken away. I hope it can be conclusively demonstrated in a few years that we can double our alfalfa yields by applying highly available commercial fertilizers. Let 10 men this season buy 500 pounds of high-grade phosphorous fertilizer, incorporate it with their soil and at the end of the season figure up and compare results. We can further increase yields by cutting and by irrigating at the right time. Alfalfa hay is the richest food when cut early in the blooming period. Do not wait until it is in full bloom. Alfalfa cut early starts its new growth quicker, especially if the ground is wet. Irrigate just before cutting or as soon after as posible. In other words, do not allow the plants to stop growing. One thing is quite certain: A lot of farmers are not getting the full profit from alfalfa. —L. E. Foster in Field and Farm.

CARE OF FARM IMPLEMENTS.

One of the most serious leaks on the farm is in the poor care taken of farm implements when not in use. As soon as the season is over, binders and other machinery, no longer needed this year, should be carefully cleaner; the grease and dirt should be removed from the bearings, and these should be carefully oiled and all bright parts greased, to prevent rusting. Preparations should be made for replacing any broken or defective parts.

If time does not permit of all this, make a memorandum to be governed by on some stormy day, and then see that everything is put in readiness for the next harvesting or haying season. Get the repairs and place them on the machines at once. Take care of the plows. Get them under cover. Clean and grease the bright parts, so that, when wanted next spring, they will scour and save the time so many farmers lose in putting their implements into working order. —Minnesota Ex. Sta. News.

The most practical way to handle dodder is to avoid buying clover or alfalfa seed which contains it. Dodder seed is of a dirty brown or gray color, with a spherical shape and a roughened surface. It is slightly smaller than clover or alfalfa seed.

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Buy NOW for your Spring Application
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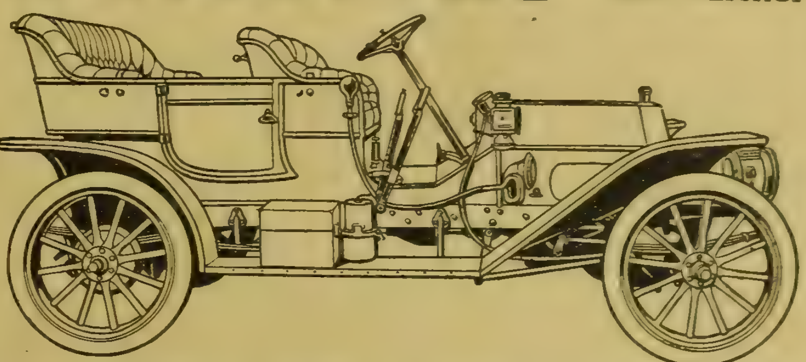

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AVERY COCKSHUTT PLOW—ten 14-inch steel bases, especially for this engine—will be sold cheap. It is brand new—has never been used. The Cockshutt Plow has won first prize at all international plowing contests for the last three years.

Both Engine and Plow will be sold below factory cost, and we will be glad to mail you full description and prices. This is a real opportunity to buy a first-class outfit at big saving over the cost of inferior goods.

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In this department we will insert your advertisement under a classified head for 1½ cents per word per issue. No ad accepted for less than 25 cents. Our classified columns are the clearing house for our many thousand readers.

LIVE STOCK.

For Sale—Registered Holstein Bulls; 1 to 2 years old. Some sired by Prince Juliana, brother of former world's record heifer, Juliana De Kol. Dam and granddam, A. R. O. cows. Three record-breakers in some of their pedigrees. M. E. Sherman, Minnewawa Vineyard, Fresno, Calif.

Buy Does Bred to "Andreas Hofer" due February, March. Black Tog. Saanen grade, hornless, wattled, $30; Red doe, fine dairy type, beautiful hare-like ears, $20; and others. R. M. Cartwright, 1353 Palm St., San Luis Obispo, Cal.

Fistula, Poll Evil, Quittor and all running sores cured permanently by a recent discovery of medical science. Write for particulars. Dr. Fred G. Matthews, Veterinary Bacteriologist, 1232 Central Ave., Los Angeles.

Jersey Bull For Sale—Golden Lad Strain. Dam has authenticated butter record. G. B. Reeves, Mountain View, Cal.

A few young White Hornless Swiss Saanen Grade Milch Goats for sale. Mrs. E. Banta, Calistoga, Cal.

Registered Shorthorn Bulls and Poland China Hogs for sale. Best breeding. P. H. Murphy, Perkins, Cal.

MISCELLANEOUS.

A Bargain—To be disposed of at a sacrifice, well established grain, hay and feed business with a trade of $3000 a month. By right party trade can be doubled. Low rent. Ill health the cause of selling. Call or address A. B. Smith, Bodega Ave., Petaluma, Cal.

Raisins—Producer to consumer, new crop loose Muscatels in 50-lb. boxes, 2 crown, 4c; 3 crown, 4½c; 4 crown, 5c; seedless, 4c. guaranteed. A. H. Dugdale, Etiwanda, Cal.

Income city property from $50 to $500 per month for ranch or acreage, equal value. Submit details, description. Parrish Barker, 207 Union Trust Bldg., Los Angeles, Cal.

For Sale—Female Scotch Collie pups; pedigreed stock. Descendants of Wellsbourne Conqueror and Anfield Model. A. C. Wisegarver, San Fernando, Cal.

WANTED.

Wanted—Your work pays the expense to learn a trade that pays $5 a day, in a few months' time; electricity, automobiles, plumbing, bricklaying; actual contract jobs; 200 students last year. United Trade School Contracting Company, 647 Pacific Electric Bldg., Los Angeles, Cal.

Help Wanted—We want several good solicitors to solicit for a high class suburban monthly publication. Good profitable employment to the right party. For particulars address Box H, Cultivator Office, Los Angeles.

Wanted—To purchase windmill or small engine and tank, also irrigating pipe. Rogers, 120 Winston street, Los Angeles.

TREES.

If You Have No. 1 Deciduous Fruit Trees, berry vines, or citrus trees, true to name and first-class, we will buy for cash or exchange for No. 1 ornamental stock; have a surplus of Acacias, Pittisporums, Date Palms, Guavas, Camphors, Monterey Pines, Cedar Deodoras, Cornichon Grape Cuttings, Spineless Cactus (Mission). Good Columbus Surrey, fine 20th Century Carbide Gas plant. Get busy. Address H. L. Bauer & Son, 737 S. Spring St., Los Angeles.

Ornamental Eucalyptus—Cleanest and best shade trees for the ranch. Acacias, pines, etc. Large stock. Ballou's Nursery, 728 East Orange Grove Ave., Pasadena, Cal.

Write for Special Price on peach trees and French prune trees, on Myrobolan root. Gridley Colony Nursery, Gridley, Cal.

Marsh Seedless Grapefruit—600 large trees for sale. E. S. Thacher, Nordhoff, Cal.

Black Walnut Selected Trees—One and two years old, 2 to 8 feet high. Also seedling peach trees, good stock, and Maliner Keen Horseradish sets. A. P. Henning, Clements, San Joaquin Co., Cal.

For First-Class Valencia and Navel Orange trees and Eureka lemons, see A. G. Snow, Oxnard, Cal.

Fine Line of Navels—Valencias and Eureka lemons for delivery spring of 1911. Contract now and get the first choice. The King Citrus Nurseries, Whittier, Cal.

NURSERY STOCK.

Having bought our seed of Luther Burbank, who guaranteed it selected seed, mostly from Giant Crimson Winter Rhubarb, we feel in shape to offer choice Crimson Winter Rhubarb plants for this year's planting at reasonable figures. Write for particulars. B. B. Currier, Sea Bright, Cal.

Rivera Nursery, L. L. Bequette, Prop.—Wholesale and retail dealers in Northern and semi-tropical trees, shrubs, roses, green house plants, etc. Have good stock of apples, peaches, etc. Send for descriptive price list. 625 S. Breed St., Los Angeles, Cal.

Our Descriptive Price List No. 2 contains all novelties exhibited at the Pasadena Flower Show, also other new introductions by Dr. Franceschi; mailed free on application. Montarioso Nursery, Box 1500, Santa Barbara, Cal.

Improved Superlative Red Raspberry Plants—Largest raspberry in cultivation. 100 plants, $5.00. Send for description. William Richard, 438 River St., Santa Cruz, Cal.

RARE PLANTS.

Wild Plant Improvement Gardens, Santa Ana, California. Newton B. Pierce, proprietor. Rare choice ornamentals and new fruits from all lands.

For Sale—Fine stock plants of Yellow Major Bonnaffon Chrysanthemums at 50c per dozen, $3 per 100. Also other varieties. Langley J. Goodman, R. F. D. No. 1, Box 22, Los Angeles, Cal.

Ahuacates, Alligator Pears (Persea Gratissima). Fresh Mexican seeds, none better for stock; $4.50 per 100 seeds; $40.00 per 1000 seeds. Montarioso Nursery, Box 1500, Santa Barbara, Cal.

FARM LANDS FOR SALE.

For Sale—San Joaquin Valley—80 acres rich land with heavy stand of alfalfa, 3½ miles from railroad and growing town, money making dairies adjoining. In natural gas and artesian belt. An excellent opportunity for dairy, hog raising, chickens and turkeys. If necessary, local bank or creamery will furnish money for cows to put onto this piece. Price of $135 per acre includes interest in 4 flowing artesian wells, furnishing plenty of water for irrigation. Terms, one-third cash, balance term of years at 6 per cent. Address S. W. McKee, 2120 West 31st street, Los Angeles. Home phone 71248.

For Sale—A 20-acre farm for $20 cash and $20 a month; possession now; $90 to $125 per acre; your crops pay for the land. Rich, level land for alfalfa, oranges, almonds, grapes, cows, chickens; abundance of ditch water, for irrigation, for $1 an acre a year. Where else can you get this? In Oakdale Colony, near good town and railroad station, climate delightful. T. Wiesendanger, 207 S. Broadway, Los Angeles, Cal.

For Sale—155½-acre ranch in Owens Valley. 120 acres in cultivation, balance good pasture, 12 acres in 2-year-old Winesap apples. Work stock, farm implements, milk cows and 100 head hogs. Ranch 2½ miles from county seat. Mountain water, continuous flow, no assessments. A good opening for dairy or creamery. Address owner, Box 52, Independence, Inyo County, Cal.

For Sale—815 acres in San Luis Obispo County. A typical dairy ranch. Plenty of wood, water, irrigable land, buildings, fenced and cross fenced. Orchards, vineyards, oranges, lemons and walnuts do exceedingly well here. Forty acres of land suitable for these. Price $21 per acre. For further particulars apply to Mrs. F. A. Clink, Pozo, Cal.

For Sale—5-acre chicken ranch, ¼ mile from Petaluma, 5-room house, brooder house, windmill and tank, all new. Fine well of water, also fine view of surrounding country. Cow, horse, wagon, and 900 laying hens go with place. Net income last year over $1,000. Price $4,500, if taken before the first of January. Call or address A. B. Smith, Bodega Ave., Petaluma, Cal.

Tulare Co.—$35.00 per acre for short time. 80 acres level alfalfa land, 4½ miles from town and railroad. Unlimited pumping water at 14 ft. Electric power available. Terms, ½ cash, balance 1, 2, and 3 years at 7 per cent. Adjoining land improved. C. H. Biggin, Pixley, Tulare Co., Cal.

For Sale—A relinquishment for $500 to 160 acres of the finest level land in Fresno County. This land is without spot or blemish, surveyed, cleared and a small shack. Adjoining deeded lands worth $30 per acre. Your chance this week only. J. E. Farnham, Hollywood, Cal.

For Sale—Eighty acres finest Eucalyptus land, 4 miles from Santa Maria, Santa Barbara County, 1½ miles from railroad station, $30 per acre. Apply to A. Frederiksen, Arroyo Grande, Cal.

For Sale—An ideal poultry ranch and mountain home, 33 acres, 3 miles from Aptos and seashore. Fine fruit land; family orchard, splendid timber grove, accommodations for 1000 chickens; best water and climate; school close by. L. Pedersen, Aptos, Cal.

Irrigated Land—The famous Gridley Colonies. Improved lands, best homeseekers' proposition in California. Write for particulars. Gridley Land Co., Gridley, Cal.

For Sale—El Cajon Grant Land. Virgin soil, 4 miles to railroad, good farm land at $30 to $60 per acre. S. B. Hawley, 1548 D St., San Diego, Cal.

The Best Buys in farm lands in Central California can be had through us. Call or write Sterling Securities Co., Savings & Loan Bldg., Stockton, Cal.

For Sale—In Sutter County, California, choice fruit and alfalfa farms, 10 to 40 acres. E. L. McCune, Yuba City, Cal.

Apple Orchards—Large and small, in the only apple producing section in California. The greatest section west of Missouri River. Write for booklet. Geo. W. Sill & Co., Watsonville, Cal.

MACHINERY.

For Sale—Second-hand windmills, tanks, engines, farm machinery that will do same work as new at half price. Complete saw mill, including stickers, circular and band saws, blower, planers, 80 h. p. steam outfit. 140 ft. 2½-inch standard at 9½c; 1600 ft. 2-inch at 7c. 8 ft. steel aermotor windmill complete with tank and pump, $48. Small distillate tanks, 50 gallons up. Domestic and irrigating tanks, galvanized and 500 to 10,000 gallons, also 50,000-gallon redwod tank, fine for storage or irrigating. Steam engines with steam pumps; gasoline engines, 3½ h. p. engine, pump jack, pipe, pump complete, $90 F. O. B., also many other sizes. 12 h. p. Fairbanks engine, No. 2 deep well Ames double-acting pump jack, 65 ft. casing, rods, and double-acting cylinder, 50 ft. belt, all complete and now pumping 20 inches water from 65 feet well into large reservoir 110 feet on top of hill. Our price $380 on cars if taken before we have to move it. Gang, disc, road, riding, walking plows, feed rack, bone grinder, Fresno and slip scrapers, wagons, surrey, grading tools, sundries. Demmitt Co., upstairs, 120 N. Main, Los Angeles.

For Sale—One No. 3 Ames pump, 125 ft. of rods, 8 inch cylinder, also one 22 H. P. Fairbanks-Morse engine. All for $1,000.00. 1½ miles north of Olive, ¾ mile south of Richfield. J. H. Gulick, Olive, Cal.

For Sale—25 h. p. Fairbanks-Morse engine. Got this a few days ago. Repairs needed were few. Condition now excellent. Our customary guarantee given. Bailie & Brandt Company, 943 and 945 N. Main street, Los Angeles, Cal.

For Sale—9 and 15 h. p. Foos Distillate engines. Will install if desired. Machinery Exchange, Main and Bruno streets, Los Angeles, Cal.

TURKEYS.

For Sale—Thoroughbred Bronze Turkeys from 38 to 40 lb. Toms, and 15 and 20 lb. Hens. Young Toms $5.00 to $7.00, young hens, $3.50 to $4.00. Pairs and trios not related. Mrs. P. E. Tucker, Tulare, Cal., R. D. 1.

POULTRY.

How to Make Money—Mrs. A. Basley's New Poultry Book is just out. It is without exception the most wonderfully complete manual on the subject of successful poultry management ever written. The secret of how to raise every turkey hatched and the "Basley Formulas," now published for the first time, are worth many times the price of the book. The "Western Poultry Book" is a practical book by a practical woman. Price $1.00. Address Mrs. A. Basley, Box 77, Venice, Cal.

Hayes, R. B., Poultry Fancier and Rhode Island Red Specialist—30 breeding pens of Reds, 20 pens miscellaneous varieties. See our birds, they tell their own story, or write for circular. Eggs for sale only. Yards in Arroyo, opposite Ostrich Farm. Box 85, Garvanza Sta., Los Angeles, Cal. Phone East 1631.

LOVELL'S BLACK MINORCAS
California's
Greatest Egg Producers

Pedigreed, trapnested, scientifically **bred.** Free circular. DAVID J. LOVELL, 5720 So. Park Ave., Los Angeles, Cal.

Day-old Chicks from my pure bred and carefully selected stock of S. C. White Leghorns from January 15 to February 15, $10 per 100; after February 15th, $9 per 100. Spring orders taken now. J. R. Heinrich Poultry Yards, Arroyo Grande, Cal., San Luis Obispo County.

Eggs for Hatching—Black Minorcas, Barred Plymouth Rocks, Rhode Island Reds and Buff Orpingtons, $1.00 per 15, $5.00 per 100; day old chicks 15c each. Cockerels $2.50 and $3.50. Stamped envelope for reply or cash with order. (No more pullets). L. W. Neilsen, R. R. 2, Box A1, Petaluma, Cal.

BONNELL'S S. C. BLACK MINORCAS
WIN EVERY TIME.

A few cockerels for sale. C. C. Bonnell, State Vice-President American Black Minorca Club, 2919 Brighton Ave., Los Angeles.

I Hatch White Rocks Exclusively—Chicks $15 per 100 from a heavy laying strain of prize winners. I am booking orders now for later delivery. Can supply stock from 1 to 10 weeks old. Write for prices. J. Wesley Lord, Inglewood, Cal.

Petaluma Hatchery—Capacity 50,000 eggs. We are booking orders for spring. Write for circular. L. W. Clark, 615 Main St., Petaluma, Cal.

For Sale—White and Buff Wyandottes from best strains. W. C. Parker, 113 Pacific Ave., Santa Cruz, Cal.

Lodi Hatchery—Just hatched, White Leghorn chicks from healthy, heavy laying stock. Booking orders for later delivery. T. C. Hawley, 504 E. Elm St., Lodi, Cal.

Single Comb Brown Leghorn Eggs—$5.00 per hundred, $1.50 single setting. **Mrs** E. Foran, Box 445, Visalia, Cal.

Poultry Wanted—We pay the highest market price for all the local poultry we can get, no matter how large the quantity; also fresh ranch eggs. We remit immediately. Allaway & Layton Co., 607 E. 3d St., Los Angeles, Cal.

Pacific Hatchery—Baby chicks, incubator eggs, and selected thoroughbred poultry, ranch raised. W. W. Clough, Ontario, Cal.

Orland Hatchery—Just hatched White Leghorn Chix. Booking orders for later delivery. P. L. Simpson, Box 13, Orland, Cal.

Baby Chix—1,000 will hatch Dec. 15th. Who wants them? First come, first served. Sussex Poultry Manor, Los Gatos, Cal.

Baby Chicks and Eggs for Hatching—Orders now taken for January and later delivery of R. I. Reds (Tompkins Strain), White Minorcas and S. C. Black Minorcas (Northrup Strain). C. U. Chamberlin, Los Gatos, Cal.

DAIRY SUPPLIES.

Have You a Cow?—Have you a creamery? Have you a cheese factory? Write us. Everything used in either a dairy, creamery, cheese factory, or for handling milk, cream, butter, or cheese. We are in a position to quote you prices on entire creamery or cheese-making outfits. We make a specialty of only the latest and best sanitary machinery and supplies. Send us a list of what you want and we will quote prices which we feel certain will interest you. O. J. Weber Co., 225-227 East Sixth St., Los Angeles, Cal.

Milk Coolers, Bottles, Caps, brushes, Buhl milk cans, Sharples separators, Babcock testers, veterinary instruments, wood soled boots and shoes, and our celebrated "Prosperity" washing powder. Guy F. Kelsey, 108 E. 8th St., Los Angeles, Cal.

HORTICULTURAL PRINTING.

The Kruckeberg Press, 123 South Los Angeles St., Los Angeles, Cal., makes a specialty of Horticultural Printing and Engraving. Cuts and illustrations of all standard, economic and ornamental plants on hand and subject to the use of patrons without cost. Samples and estimates cheerfully furnished. Remember, we design, write, engrave, bind and print; in brief, do the "whole thing," at no additional expense to the customer. Correspondence a pleasure.

A BARGAIN.

"Yes," said the specialist, as he stood at the bedside of the miser-millionaire, "I can cure you."

"But what will it cost?" came feebly from the lips of the sick man.

The specialist made a swift mental calculation. "Ninety-five dollars," was his answer.

"Can't you shade your figure a little?" wailed the other. "The undertaker's bid is much less."

When the children know more than they ought to, it may be because the parents do not know as much as they should.

WORRY DOES KILL.

Modern science has brought to light nothing more curiously interesting than that worry will kill. More remarkable still it has been able to determine from recent discoveries just how worry does kill.

It is believed by many scientists who have followed carefully the growth of the science of brain diseases that scores of the deaths set down to other causes are due to worry and that alone. The theory is a simple one, so simple that any one can readily understand it.

Briefly put, it amounts to this: Worry injures beyond repair certain cells of the brain, and the brain being the nutritive center of the body, the other organs become gradually injured, and when some disease of these organs or a combination of them arises death finally ensues.

Her Haunting Fear.

Bridget: Time brings many changes, Nora.

Nora: Indeed it does.

Bridget: Whin I was little I used to cry for fear the policeman would get me, and now I cry for fear I won't get the policeman!—Harper's Bazar.

THAT ENGLISH AGAIN.

(From Judge.)

"Waiter, make a good fire at once, for I am awfully wet; and bring me a drink, for I am fearfully dry."

Don't neglect the cultivation of the children. They are the best crop raised on the farm, and deserve careful attention.

150 HEAD OF
Cows and Horses
130 TONS OF
Alfalfa and Oat Hay

Known as the Chicago Dairy and Stock Farm, corner of Florence and Central Ave., Los Angeles.

Tues., Nov. 29, at 9:30 Sharp.

Herd consists of 100 head of fine dairy cows, Holsteins, Jerseys and Durhams, young and in fine condition; many fresh, giving large quantities of milk others coming in soon. One of the finest dairy herds in Southern California. 14 head of fine Heifers coming fresh; 12 fine heifer calves, 2 thoroughbred Holstein bulls, 4 years old; 1 blue Durham bull, 2 years old; Jersey bull, 2 years old. This herd was started by Mr. Escallier and all stock has been carefully culled and selected from the finest milking strains in the state. The cows are in the very pink of condition and no finer herd of dairy stock can be found anywhere. Owner especially requests parties interested in dairy stock to inspect this herd and see them milked prior to sale, at 4 p. m. daily.

One black work team, 5 and 6 years old, weight 3000 lbs. sound; 1 black and roan team, 4 and 6 years old, weigh 3750 lbs., sound; team of geldings, years old, weight 1400 lbs. each, sound 10 head of all purpose horses and mares weight from 1000 to 1250 lbs. each, al good ranch stock and all broken.

68 tons of baled alfalfa hay; 40 tons of baled oat hay; 40 tons of stacked alfalfa hay; 3 sets heavy work harness 3 sets light wagon harness; 3 sets single driving harness, one Concord buggy one fine milk wagon, same as new, cos $265; one small milk wagon, boiler three bunk houses, tool shop, can house cow barns and stanchions for 60 cows etc. One heavy hay wagon; one ligh hay wagon.

Owners are positively retiring from the dairy business and closing out thei entire dairy and ranch outfit, and if yo are in the market for first-class stock do not miss this sale. Teams will mee Central ave. cars at end of line, betwee 8:30 and 10 a. m., Tuesday morning, o take Watts local to Florence avenue Walk one-half mile west.

Terms $100 and under, cash; over $10 one-third net cash, balance six months time with bankable note and eight pe cent. interest; three per cent. discoun for cash on time sums.

GUY A. CHERRY.

RHOADES & RHOADES
AUCTIONEERS
830-832 S. Main st. Los Angeles, Cal
Phones: F 1259 Main 1259

Household Department

IN COMMON THINGS.

Seek not afar for beauty, Lo! it glows
In dew-wet grasses all about thy feet;
In birds, in sunshine, childish faces sweet;
In star and mountain summits topped with snows.

Go not abroad for happiness. For, see!
It is a flower that blossoms by thy door;
Bring love and justice home; and then no more
Thou'lt wonder in what dwelling joy may be.

Dream not of noble service elsewhere wrought,
The simple duty that awaits thy hand
Is God's voice uttering a divine command;
Life's common deeds built all that saints have thought.

In wonder-workings, or some bush aflame
Men look for God, and fancy Him concealed;
But in earth's common things He stands revealed
While grass and flowers spell out His name.

The paradise men seek, the city bright,
That gleams beyond the stars for longing eyes
Is only human goodness in the skies.
Earth's deeds, well done, glow into heavenly light.

MINOT J. SAVAGE.

ONE OF GOD'S CHARADES.

This morning I witnessed a deed that ought to be recorded and rewarded.

I had been enjoying an all too rare treat, a morning gallop with Kitty—kindest of little beasts man ever bestrode. I had left her at the stable, and was walking home along Broadway, when, at the crossing, I came upon a knot of twenty or more men, boys, policemen, and standing teams. A sewer main had lately been laid across the street and the hind wheel of an overloaded truck wagon had found in the new pavement a soft place close by the track of the tram, and had sunken so deeply that the horse, great noble-looking fellow as he was, could not have drawn it out had he been multiplied by four.

Drivers, policemen and volunteers had been at work with great timber evers and planks and blocking, to ry up the sunken wheel; but the nost they had accomplished was to et the end of a scantling nearly unler the wheel in such wise that if it ould be rolled foward at all, the cantling would make an inclined lane up which the wheel could climb ntil it should reach the pavement evel.

With everything in readiness, and ll the "pries" at work, the men made final appeal to the strong and spired bay to pull once more. Once nd again he responded generously, t without effect. Then he desisted nd continued to desist, saying good turedly, but as plainly as ever orse could, that it was useless and human to put one horse, however rong, to do the work of four.

It was now nearly time for the ectric to come whizzing down the obstructed track. Something must be done at once. "There is no help for it," said the boss of the trucking teams—"there is no help for it; we shall have to bring on Old Whitney." So the well-groomed bay was led out of his shafts and Old Whitney taken from another loaded wagon. She had by no means the spirited look of the bay. Her arching neck had long since sunken to the general level of her dorsal skyline. Her great ears seemed incapable of motion, and her face was pathetically heavy and sad. Each several hair lay just where the drying from unnumbered sweats had left it, and no two seemed to lie together.

Her gaunt hulk was soon backed into the heavy truck shafts, and the trace chains made fast to the whiffletree—at first a little too short, then lenthened a bit to give her sea room. There was no savage jerk upon the bits, no brandish of whip, no blow, no angry yell, nothing but a giving of free rein, and the projection of—what shall I call it? I have heard all sorts of sounds addressed to equine ears by men of many tongues and languages, but this I never heard before. It had for a basis the kiss-like sound so commonly used by American horsemen, yet some way it was peculiarly vocalized with an indescribable guttural explosion that was amazingly penetrating and human. It was at once coaxing, commanding, trustful, strenuous, kindly, authoritative, desperate, and I know not what else.

Old Whitney at once lifted her heavy ears, and as another and another of these insistent kisses were thrown at her, she suddenly took on the aspect of a new embodiment of life. She tested her tackle carefully, she felt the ground over with her feet, to find if there were slightest points of vantage, she ascertained the central line of deadweight draft, and swinging herself one point off it to the left, gave a good, generous one-horse power tug at the immovable mass.

In vain.

Then swinging round two points to the right, she gave another, surely a two-horse power lift at the terrible load.

Immovable it remained.

Another coaxing, confident, kindly, anxious kiss thrilled through her excited brain—another.

She now fully took in the situation. It was an emergency. She knew what an emergency meant. She had been called on before. She was this man's only present hope. Swinging once more a trifle on the great kingbolt and drawing a deep, deep breath, she suddenly bowed her sinewy neck and bony frame, and with a lunge that would have launched a world had creation been her business, she dashed with straining strides across the twenty feet of treacherous pavement and trembling in every fibre of her being landed her inhuman load upon the solid street.

Well might the crowd stand breathless, as it did. Such perfect intelligence as to every ounce of help she could extort from the lay of the street, and from the leverage of the kingbolt—I fear also perfect intelli-

ARE YOU ONE OF THEM?

There are multitudes of young people who are not in the public schools, but who look to the business college for the special educational training and finishing needed preparatory to lucrative business employment. Of such over a half thousand enroll every year at the ISAACS-WOODBURY—the recognized leader since 1884.

We have abundant teaching force of the highest grade, clean and inviting rooms, with perfect light and ventilation—100 FEET ABOVE STREET NOISE AND DUST. Call, write, phone. New Catalogue—27th year.

The Isaacs-Woodbury Business College

5TH FLOOR HAMBURGER BLDG., LOS ANGELES

F1850 Edward King Isaacs, Pres. MAIN 2305

SECURITY SAVINGS BANK

Spring and Fifth Sts. Los Angeles, Cal.

OLDEST AND LARGEST IN THE SOUTHWEST

Capital and Reserve $1,850,000.00

Resources - - - $29,000,000.00

SECURITY BUILDING Ground floor and Basement occupied by the Security Savings Bank and Safe Deposit Vaults.

Over 61,000 Open, Active Accounts

4% Interest on Savings Accounts
And on Six Month's Certificates of Deposit

3% On Special (Ordinary) Savings Accounts
Which Accounts may be checked against without presentation of Pass Book. Interest is paid monthly on the minimum monthly balances provided it amounts to $300 or over.

The Safe Deposit and Storage Department is the largest and best equipped in the West

Oakland's New Engineering College

THIRTEENTH AND MADISON STREETS

Polytechnic College to Have Elegant Building and Equipment

The magnificent new re-enforced concrete engineering building of the Polytechnic College, at 13th and Madison Sts., Oakland, is nearing completion. This new and modern building, together with extensive equipment, will give this college superior facilities in all departments of engineering work. This institution appeals to young men who wish a high-grade course in all the essentials, but who cannot spend four or five years in college.

Contracting and Practical Work

The crowning feature of the Polytechnic College of Engineering is in combining practice with theory. It is, perhaps, the only school in the United States that engages in actual engineering and construction work, and gives its students actual practice while pursuing their courses.

Complete courses in Civil, Electrical, Mining, Mechanical, Hydraulic, Gas and Steam Engineering; also in Architecture.

"There's very little heat. But try this with an ordinary lamp and see what happens."

LIGHT—NOT HEAT

The Angle Lamp gives less heat than any other method except incandescent electricity. Will *not* scorch or discolor your ceiling, etc. Eliminates possibility of fire. Gives well distributed shadowless light without dangerous and unpleasant heat—delightful to read or work by.

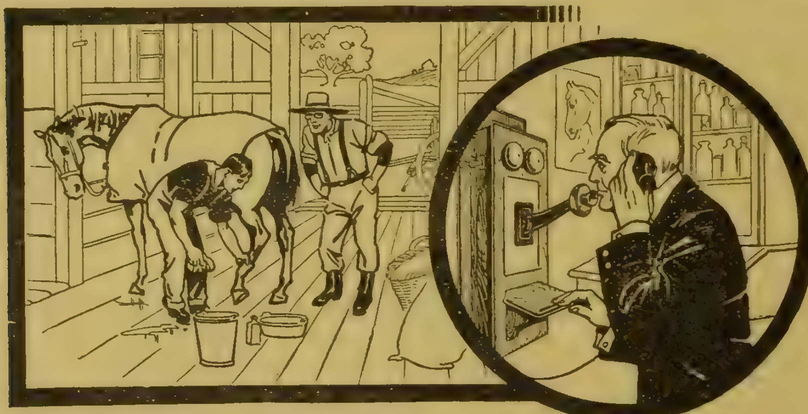
The Angle Lamp

is the simple, economical, convenient and perfectly satisfactory method of burning common kerosene. It *never* smokes or smells whether burned at full height or turned low. *Lighted and extinguished like gas.* Filled like a water bottle. Requires filling about once a week.

The Cheapest Form of Light

Being fully ⅓ to ½ more economical than even the ordinary lamp it soon saves its cost. It is made in 32 varieties. Come in and see it or *write for catalog.*

Boesch Lamp Co. 1135 Mission St. San Francisco
Established 1869. Incorporated 1890.



Indispensable in Emergencies

THE sickness of a valuable animal on the farm demands prompt remedies.

It 's a case for the veterinary — a case where minutes count. That 's where the Bell Service shows its value to the farmer.

By means of the telephone the veterinary is reached, and he at once tells the farmer what to do until he arrives.

No far-sighted farmer gets along without the protection of the Bell Service.

He can never tell when it is going to save him from serious loss. Besides, he has daily proof of its usefulness.

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Every Bell Telephone is the Center of the System

Charges for Soil Work

(Temporary)	PER SAMPLE
Mechanical Analysis (five grades of fineness)	$1.00
Lime and Magnesia Determinations (available)	1.00
All the above with Phosphoric Acid, Chlorine, Alkalinity, and approximate Humus	4.00
Potash	1.00

SAMPLES—Take surface sample from first foot: subsoil from between 2½ and 3½ feet depth; deep subsoil from between 7 and 8 feet depth. One pound is enough for a sample if well mixed before dividing down. PRICES—These prices are in force only while advertised.

R. R. Snowden
Chemist and Soil Engineer
Phones: Main 622 and A 8017.
320 Stimson Block
Los Angeles, Cal.

Sievert Distillate Oil Burners

the most efficient all round Heating appliances for Stoves, Ranges, Boilers, Water-Heaters, and especially Hot Air Furnaces of all kinds. Brooder House and Heating Stoves. Send for Free Circulars.

Sievert Oil Burner Co., Manufacturers.
710 N. Main St., Los Angeles, Cal.
All Kinds of Oil Storage Tanks.

The California Cultivator leads in advertising and circulation. Why? Because it always gives results. Try it and see.

gence as to the cruelty of the imposition. Such desperate power of will; such willingness to will desperately; and all, not to escape the task; but merely to serve and please her master in his hour of need. I could not stop to pat her infinitely pathetic face, nor even to see if her driver gave her unkempt forelock one little approving pull. The tears were rolling down my cheeks and I had to hasten away.

Old Whitney had been counted on, and old Whitney had met all expectations.

Postscript.—The foregoing illustrates so many things in human life, and is so capable of yielding a moral that I fear some readers will be tempted to take it for a parable merely. To any such I wish to say that I have reported the incident exactly as I saw it on the open streets. It is not a parable, but I strongly suspect it gives us an acted charade whose divine significance men should try harder to guess.—The Independent.

CHRISTMAS BUYING.

Memories of buying Christmas presents the day or several days before Christmas should be sufficient to induce everyone to begin immediately to purchase and lay aside presents which will be needed at that time. It is born in human nature to put off such a task until almost the last moment, then, with clerks tired almost to death and stores packed so full that it is impossible to get a proper look at any article, selection is out of the question.

For the next few weeks attention may be had from the best clerks in the stores, fresh goods may be secured to choose from and instead of hours spent in fruitless worry a few moments complete the task satisfactorily.

The advantage of early shopping should be especially appreciated by Californians who send packages by mail or express. The two weeks preceding Christmas find the mail cars stacked to the roofs. To be sure, one wishes the present to arrive as near Christmas day as possible, but a package with "To be opened on Christmas day," sent two weeks in advance, will only add to the recipient's zest by keeping him wondering what is in that package.

APPLE RECIPES.

Jellied Apples.

One qt. water, 1½ cups sugar, juice of 1 lemon. Boil 10 minutes in porcelain saucepan. Pare, quarter and core 8 medium sized Watsonville Bellflower, or other tart apples, and cook in the above syrup until tender. Remove them carefully to a mold. Dissolve ½ package gelatine in 1 cup water, strain, add to syrup. Pour this over the apples and set mould in a cool place until the contents harden. Serve with whipped cream.—M. H. S.

Apple Custard Pie.

Pare and cook 4 tart Watsonville apples. Beat with a fork, and add 1 scant cup sugar, 1 tablespoon butter nutmeg, ginger, lemon essence, pinch of salt and scant tablespoon cornstarch mixed with milk. Break into a cup 2 eggs, beat well and add enough milk or cream to fill the cup. Mix well with apples and cook the mixture. Line pie tin with good crust and when it is baked pour in the custard. Meringue of whites of 2 eggs beaten with 2 heaping tablespoons sugar. Spread on pie and brown in oven.—C. B.

Baked Apple Dumplings.

Pare and core tender Watsonville apples and fill with sugar. Make a dough of 1 cup mixed lard and butter, 1 qt. flour, 3 teaspoons baking powder, salt and milk. Roll, and cut out the pieces, placing an apple on each piece. Fold the dough to cover the apples and grate nutmeg over them. Place in pan with water to half cover, and ½ cup sugar and butter the size of an egg. Baste while baking. Serve with hard or liquid sauce.—J. R.

Apples a la Manhattan.

Peel and core tart Watsonville apples. Bake with half a cup each of water and sugar.

Make a syrup of 1 cup of water, ½ cup of sugar and the juice of half a lemon. Add 2 tablespoons each of chopped raisins, chopped candied cherries and chopped blanched almonds, and cook slowly for half an hour. Place the apples in individual glass dishes and cover with the cooked sweets and syrup. Serve cold with cream.—A. M. W.

German Apple Cake.

One cup of butter, two cups of sifted flour with two level teaspoons of baking powder (or two cups of self-rising flour), two well beaten eggs, and milk enough to make a rather soft dough. Roll thin and lay in pie plates. Cut any tender Watsonville apples in sixteenths and lay them on top, pressing them lightly into the dough. Sprinkle with cinnamon, sugar and tiny bits of butter. Bake until the apples are cooked.—A. E. H.

Apple Sago Pudding.

One cup rather thin apple sauce, 1 rounded tablespoon sago. Cook together in double boiler until sago is done. Pour into mold and serve cold with whipped cream, sweetened and flavored with nutmeg.—L. M. J.

Apple Sauce Filling for Layer Cake.

One cup Watsonville apple sauce, 1 cup powdered sugar, whites of 2 eggs. Beat whites until stiff, add sugar and sauce and beat until white and of the proper consistency for filling.—L. M. J.

Apple Tarts.

Roll out rich puff paste and cut into rounds with a biscuit cutter. Make half of them into rings by removing the centers with a smaller cutter. Place the rings on the rounds and bake. Fill with Watsonville apple jelly or apple sauce and garnish with whipped cream.—J. E. S.

Apple Pudding.

Stew ½ doz. Watsonville apples and sweeten. Pour over the fruit a batter made of ½ pt. milk, 2 eggs, butter the size of an egg, 2 teaspoons baking powder, and the necessary amount of flour. Bake and serve with any sauce.—J. R.

Apple Sauce Cake.

Sift together 2 cups flour, 1 cup sugar, 2 level teaspoons soda, 1 teaspoon cinnamon, ½ teaspoon cloves, ½ teaspoon nutmeg, 3 tablespoons chocolate, 1 tablespoon cornstarch. Add 1 cup chopped walnuts, 1 cup raisins. Last add 1½ cups apple sauce and ½ cup melted butter.—R. D. R.

Apple Sauce Cake.

One and one-half cups apple sauce (strained and sweetened.) 1 cup sugar, 2 cups flour, 1 cup seedless raisins, ½ cup butter, 1 tablespoon hot water, 2 teaspoons soda, 1 teaspoon cloves, 1 teaspoon cinnamon.—C. A. J.

Dried Apple Fruit Cake.

Three cups of dried Watsonville

Eucalyptus Seeds

In large or small quantities, 33 kinds to select from. Write for free pamphlet "Eucalyptus Culture." It gives full directions for sowing the seed, raising the plants and planting out into the field, together with descriptions of all the leading species, giving their uses and the localities to which they are adapted. Sample packets 15c each, 2 for 25c, 4 for 50c, 9 for $1.00. Choice Flower, Garden, Tree and Palm Seeds, Roses, Flowering Plants etc. Catalogue mailed free upon application.

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Both one year for $1.50.

apples soaked over night in cold water enough to swell them. Chop and stew until almost soft in 3 cups molasses. Add 1 cup seedless raisins and stew a few moments. When cold add 4 full cups flour, 1 cup butter, 3 eggs and 1 teaspoon soda. Bake in a steady oven. Raisins may be omitted, or spices and walnuts may be added.—L. M. J.

Apple Sundae.

Stew sour Watsonville apples, sweeten, strain through wire seive. Add whites of 2 eggs and 2 teaspoons gelatine (which has been dissolved). Whisk briskly until stiff. Line dish with split bananas or oranges and pour in the fruit, sprinkle top with chopped nuts and add a syrup made of sugar and a little strawberry juice. —S. M. N.

PANTS.

Gentle reader, do yours fit? They do not. Why? You do not know. Do those of your neighbor fit No. Why? He does not know. Nobody knows. Nobody can tell or give him a rational guess. The whole subject is shrouded in mystery and doubt, yet it never has been investigated. Alike in belles-lettres and in scientific theses it remains unknown. Yet what subject approaches it in wide and catholic interest?

All the world wears the humble pant, but no great mind has ever pierced the mystery which enfolds its, or their, history, purpose, merits, and defects. Thus, the word is often used in the plural form but there seems to be no more valid reason for this than for the peculiar nature of the article itslf. Again, this same garment is sometimes called a trouser, or trousers. There seems no reason why we should not use the shorter and uglier word. There can be given no worthy reason, either, why this article, or these articles should ever have been invented, ungainly, uncomfortable, ungraceful, uneverything. They drag at the bottom and bag at the knees, are wholly without form or comeliness. Moreover, they cost from four to twenty-four dollars; either of which sums is a lot of money.

Yet we wear them. Why? If you stop to think of it, you will be unable to answer. For centuries this custom has existed without any foundation of reason. Why? For ages this great question has been asked and has been left unanswered. If you will gaze into the face of the Sphinx, smiling, inscrutable, you will, after reading this, have a better idea of what is on the Sphinx's mind. Why are pants? That is the unread riddle of the ages.—November Everybody's

CLEANING LACES AT HOME.

When laces are sent to the cleaners they are often sent home looking beautifully clean but very much injured by the use of cleaning fluids. Any kind of lace can easily and safely be washed at home. Delicate white lace can be cleaned by washing in alcohol by using it as if it were water. Put the lace in the fluid and allow it to soak for ten minutes, then wash by lifting up and down and pressing and squeezing between the hands and rinse in clear alcohol. If a creamy hue is desired the lace can be dipped in water to which some stained coffee has been added until the right shade is procured.

The best way to dry lace is to baste it to a cloth drawn tightly over a smooth board, but it should be very carefully pulled into perfect shape, and it should be kept damp while it is being handled. The best way to dry a short piece of lace is to spread it smoothly over a large window pane while it is still damp and when perfectly dry the lace will be crisp and new in appearance.

Battenberg lace and other white laces that are soiled enough to be washed are made beautifully white and clean by putting them to soak in warm borax suds and if very soiled they should be allowed to remain over night, and the lace will not be torn or stretched if it is basted upon a piece of white cloth before washing.

If the laces are very soiled a tablespoonful of borax should be used to a quart of water. Wash the lace though this suds, then rinse through three or four waters to get rid of all suds, then put in a clean bowl and pour enough hot borax water over the lace to cover it well and let stand closely covered until the water is cold, then squeeze this water out and dry without rinsing. This water will not only whiten the lace but give it just the right degree of stiffness, and there is nothing better than the hot suds for cleaning white lace veils or any lace trimmed article.

Black lace may be freshened by washing and rinsing in cold tea, and as a hot iron will make black lace appear rusty, the best way to dry the pieces is to wind them around a bottle filled with hot water and then pin a soft cloth over the lace.—M. H.

THE HOT WATER BAG.

The idea that a hot water-bottle at the feet is unhygienic and should be resorted to only in the coldest weather, if at all, is pronounced absurd by physicians. If there is a tendency to insomnia or a sense of fullness in the head at bedtime, a hot-water bottle offers one of the simplest and most effective methods of drawing the blood away from the brain, thus superinducing sleep. One fruitful cause of wakefulness at night is an excessive supply of blood to the brain. The cerebral arteries are stimulated, and with them all the mental faculties. The purpose of sipping hot milk just before composing oneself to sleep is as much to draw the blood away from the brain by giving the stomach something to do as to fortify the stomach against hunger. A hot water bottle at the feet performs a similar mission and should be employed whenever needed, irrespective of the calendar.

JUST "PLUG."

Everyone is not a howling success, and those who overtake it are compelled to run fast, work hard, jump high, and keep everlastingly "plugging." Cleverness counts for something, but to the fellow who "plugs" from Monday morning till Saturday night, belongs success, and he is the one of whom we speak as being lucky. It's not luck, however, but that eternal "plugging" whose reward is inevitably success.

To judge a man by a single act is to apply the law of exception rather than the law of average.

Nearly every one is better than he supposes the other fellow would be under the circumstances.

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W. W. THOMAS,
The Strawberry Plant Man,
216 Main St., Anna, Ill.

San Francisco and Los Angeles Produce Markets

Los Angeles Markets

Butter.

LOS ANGELES, Nov. 23, 1910.

Butter is still at last week's quotations with firm market.

Price to trade 2½c in advance of the following Produce Exchange Quotations:

Extras	.35
Firsts	.32½
Cooking	.25

Cheese.

Local	.18
Northern, fresh	18½@19
Oregon Daisy	18½@19
Imported Swiss	.32
Domestic Swiss	22@24

Eggs and Poultry.

Eggs are in keen demand, market firm, but quotations still standing at last week's figures.

Paying price f. o. b.. L. A. is:

Local ranch candled	.52
Case count buying price	.48
Eastern fresh	.38
Eastern storage	.34
Seconds	.32

Dealers pay for live poultry f. o. b. L. A.:

Hens, per lb	15@18
Roosters	8@16
Fryers and Roasters	18@20
Broilers	22@23
Turkeys	20@24
Ducks	17½
Geese	.17
Squabs, per doz	1.50

Live Stock.

The following quotations are f. o. b. Los Angeles, on all stock:

Hogs, 175 to 200 lbs.	9.00
Prime Steers	.5
Heifers	4@4½
Calves, per lb	6½
Sheep, ewes, per head, shorn	5.00
Lambs, per head	3.75@4.25
Wethers, shorn	5.00

Potatoes.

Wholesale prices are:

Highlands	1.30@1.60
Salinas.	1.90@2.00
Lompoc	1.90@2.00
Nevadas	1.75@1.85
Sweets, Yellow, per ctl	1.25@1.50

Onions.

Wholesale quotations:

Australian Browns	1.75
Oregons	1.75
Yellow Danvers	1.75
Garlic	.8

Vegetables.

Wholesale quotations:

Artichokes, northern, doz	1.00@1.10
Beets, sack	.90
Beans, Lima	.5
Beans, green	4@5
Beans, wax	4@5
Brussels Sprouts	.10
Bell Peppers, lb	.5
Green Chilis	5@6
Cucumbers, per box	.75@90
Cabbage, per sack	.65@70
Celery, crate	2.50
Cauliflower, crate	1.50
Carrots, per sack	.90
Corn, box	.75
Egg Plant, per lb	.5
Horseradish	.12½
Onions, green, per doz bunches	.35
Leeks, per doz	.40
Lettuce, common, crate	1.25
Oysterplant, doz	35@40
Okra, lb	.8
Peas, per lb	.6
Parsley, per doz bunches	.25
Parsnips, doz. bunches	.40
Pumpkins lb.	1@2
Radishes, per doz. bunches	15@20
Rhubarb, Cr, Winter	1.25
Rhubarb, Strawberry	1.75
Spearmint doz bunches	30@35
Spinach, per doz	20@25
Hubbard Squash, lb	1½@2
Summer Squash	50@60
Tomatoes, lug	50@75
Turnips, sack	.90

Citrus Fruits.

Navels	2.25@3.00
Grapefruit	2.00@3.75
Lemons	4.00@5.00

Fresh Fruits.

Wholesale prices on the market are:

Alligator Pears	5.00
Apples, Bellflower	.85@1.25
Spitzenbergs	2.00@3.25
Jonathans	2.25@2.50
Greenings	1.10@1.25
Pearmains	1.10@1.25
Pippins	1.15@1.35
Pineapples	8@9
Casabas, doz	1.50
Figs, box	1.00
Grapes, lug	1.25@1.50
Tokays	1.25@1.50
Mangoes, lb	10@15
Persimmons, lb	5@6
Pomegranates, lug	1.00
Guavas, basket	4@5
Pears, lb	.5
Bartletts	2.50@3.00
Strawberries	12@14
Blackberries	.12
Raspberries	.12
Peaches, Clings, box	50@75
Quinces, lug	1.00
Watermelons, lb	2@2½
Christmas Melons	2.00@2.25

Dried Fruits.

Wholesale prices are:

Apricots	12½@13
Evap apples, fy, per lb	9@10½
Figs, pound bricks, box 100	85@2.00
Peaches	6½@7½
Nectarines	.10
Pears	.12½
Prunes	5@11
Plums	.10

Beans Dried.

Wholesale quotations:

Limas	5.00@5.25
Black eyes	5.75@6.00
Pinks	5.25
Lady Washington	4.25
Small white	4.25
Garvanzas	4.50@5.00
Lentils	7.00

Nuts.

Wholesale quotations are:

No. 1 soft shell walnuts	16½@18½
No. 1 H S	.14
No. 2, all kinds	.11

Grafted or budded an advance of 2½c.

Brazil nuts	14@15
Chestnuts	14@15
Filberts	.14
Almonds, IXL, per lb, new	15½@16½
Pecans, polished	15@16
Peanuts, Eastern	7@7½
Peanuts, Cal	.6

Honey.

Wholesale quotations:

Extracted water white	9@9½
Extracted light amber	.8
Comb W. W.	18@20
Light amber	.15
Beeswax	25@30

Hay.

Buying prices f. o. b. cars L. A. are:

Barley hay	10.00@13.00
Wheat hay	10.00@13.00
Tame oat	12.50@14.00
Alfalfa	10.00@11.00

Grain.

Wholesale selling price, f. o. b. Los Angeles:

Wheat, new per ctl	1.75@1.80
Corn	1.60
Popcorn	3.50@4.00
Kaffir corn	1.75
Egyptian corn	1.75
White oats	1.80
Rye	2.00
Seed Barley	1.20

Feed Stuff

Wholesale selling price f. o. b., Los Angeles:

Alfalfa meal	1.10
Cracked Corn	1.65
Cracked Wheat	1.90
Shorts	1.80
Bran	1.55
Oil Cake Meal	2.50
Feed Meal	1.70
Rolled Barley	1.15

San Francisco Markets

Butter.

SAN FRANCISCO, Nov. 22, 1910.

Butter dropped slightly during middle of last week, but on Friday won back its loss and now stands at last week's quotations, except that firsts have advanced 2 cents.

California extras, per lb	.35½
California firsts	.33
California seconds	.29
Storage	.30½

Cheese.

California flats, new	13@17
Cal. Young Amer. fy new	16½@18
Oregon, Fancy	.16½

Eggs and Poultry.

Eggs advanced a half point, but Saturday's large receipts caused a slump and present quotations are lower than last week.

Official quotations of the S. F. Wholesale Dairy and Produce Ex. are:

Fresh ranch extras	.54½
Firsts	.53
Seconds	.33
Storage	.31½
Hens, per dozen	4.50@10.00
Fryers, per doz	5.00@5.50
Ducks	6.00@10.00
Broilers	3.00@4.50
Roosters, per doz	6.00@8.50
Spring Turkeys	21@23
Geese	2.00@3.00
Pigeons	1.50@2.25
Squabs	3.00

Live Stock.

San Francisco prices gross weight:

Steers	4@5½
Cows and heifers	3¼@4½
Calves, per lb	4½@6¼
Hogs	5@9
Milk Lambs, Unshorn	6@6¼
Wethers No. 1	4¾
Ewes No. 1	4¼

Potatoes.

Wholesale market quotations:

River White, new, box	85@1.10
Salinas Burbanks	1.50@1.70
Oregon Burbanks	1.40@1.50
Sweets, ctl	2.00@2.10

Vegetables.

Wholesale quotations:

Artichokes	25@40
Beans, Lima, lb	4@5
Beans, string, per lb	6@9
Beans, wax	4@5
Cucumbers, box	1.25@1.50
Celery, per doz	40@50
Chili Peppers, per box	40@50
Bell Peppers	6@7
Green Corn, sk	75@1.25
Egg Plant, box	40@65
Lettuce, per crate	4.50@5.00
Okra, box	40@60
Peas per lb	5@6
Summer Squash, box 25 lbs.	1.25@1.75
Rhubarb, box	1.00@1.25
Tomatoes	40@75
Garlic	2½@3

Onions.

Onions, sk, Cal	85@1.10

Citrus Fruits.

Navels, new	1.50@3.50
Grapefruit	1.50@3.00
Lemons	1.50@5.00
Limes	3.00@5.00
Tangerines	1.00@2.00

Fresh Fruits.

Apples, box	50@85
Apples, Bellflowers	90@1.00
Newtowns	75@1.25
Bananas, Hawaiian	2.00@3.50
Cranberries, Coos Bay, box	3.50@4
Figs, box, single	50@1.00
Grapes, Isabellas	90@1.15
Huckleberries, lb	7@10
Pears, Bartletts	1.50@2.00
Winter Nelis	1.50@2.00
Persimmons, box	50@1.00
Pomegranates	50@1.50
Quinces, box	85@1.00
Raspberries, chst	4,00@7.00
Strawberries, chst	4.00@6.00

Dried Fruits.

Market is quiet and general tone not at all strong.

1910 crop, f. o. b., carload lots, per lb: Apples, 7@8¼c; Apricots, 10½@13c; do Moorparks, 14c; Peaches, 5¼@7c, with a premium of ⅛@¼c on Muirs; Prunes, Santa Claras, 5½c with ½@¾c premium on 40s; outsides 5¼@5⅜c; Figs, 4¾@6½c for White and 4¼@4½ for Black; Pears, 9¾@13c.

RAISINS—1910 crop: London Layers, in 20-lb. bxs: 6-crown clusters, $2.25@2.50; do, 5-crown, $1.75@2.00; do 4-crown, 1.40@1.50; 3-crown lawers, $1.25@1.30; do, 2-crown, $1.15@1.20. Seeded, per pkg.—Fancy, No. 16 5¾ 6c; Choice, No. 16, 5¼@5½. Loose Muscatels in 50-lb. bxs—Standard, 4-crown, 5½; do 3-crown, 4½@4¾c; do 2-crown, 4@4¼c. Dried Grapes, 3c. Seedless—Muscatels, 3½c; Sultanas, 4½c; Thompsons, 5c.

Nuts.

Walnuts, No. 1 soft shell	.15
Walnuts, No. 1 hard shell	.14½
Almonds, '10 N P U	.13
Almonds, '10 Nonp	.15
Almonds, '10 I X L	14@15
Almonds, Peerless	.12
Pecans	14@17
Chestnuts, Cal	6@8

Beans Dried.

Limas	4.70
Pink	4.40
Black eyes	5.50@5.65
Small White	3.70
Large White	3.65
Kidneys	5.50
Garvanzas	3.25
Bayo	4.70
Horse beans	2.00
Red Mexicans	5.25
Cranberry	4.50@4.75

Hops

Hops, coast, 1910	12½@15
Hops, Oregon	10@13½
Hops, 1909	8@10

Honey.

W. W. Comb '10	.15
Dark Comb	.12½
Extracted White	.8
Extracted dark	.6½
Beeswax, per lb	24@30

Hay.

Receipts of hay for the week ending today were 3804 tons. This amount was in excess of what was required during the week to supply the daily demand at this time. There is a thorough dullness pervading the entire trade in all its branches.

The statement recently issued by the Hay Association showing available warehoused stock in the country tributary to the San Francisco market of 280,000 tons, is anything but an encouraging feature of the situation.

The shipping trade is also quiet, as there has not been as much hay moving out of this port recently as we were shipping a month ago.

The trade on alfalfa is also quieter, and the market a bit dull. The field has been cleared up, and practically the last of the hay has come into the market here during the week, and from now on warehoused stock will have to be drawn on to supply the trade.

Choice Tame Oat, ton	10.00@12.50
Fancy wheat	12.50@13.50
No. 1 wheat or wh and o	10.50@11.50
No. 2 wheat or wh and o	9.00@10.00
Choice tame oat	10.50@11.50
Other tame oat	8.00@9.50
Wild oat	8.00@9.00
Stock hay	5.50@6.50
Alfalfa, ton	9.00@11.00
Straw	40@60

Grain.

Wheat, No. 1	1.40@1.45
Barley, fancy	1.02½@1.03¾
Barley, good to choice	1.00@1.01¼
Barley, poor to fair	92½@98¾
Oats, white	1.45@1.55
Rye, new crop	1.47½@1.52½
Alfalfa seed	18@20
Mustard brown	4½
Millet	2¾
Flaxseed	5@5½
Broom corn seed, per ton	23.50

Feed Stuff.

Bran, per ton	30.00@32.00
Feed cornmeal, per ton	36.00@37.00
Cracked corn	36.00@37.00
Ground barley, per ton	22.00@24.00
Rolled oats, per ton	29.00@31.00
Middlings	34.00@36.50
Oil cake, per ton	40.00@41.50
Cocoanut cake, per ton	25.00
Mixed feed, per ton	25.00@27.00
Shorts	31.00@32.50

Deciduous Market

SACRAMENTO, November 19, 1910.

The following circular of the California Fruit Distributors gives number of cars of deciduous fruit shipped from all points in California for the week (7 days) ending Friday morning, November 18th, 1910:

Grapes:. 79 cars.

This record shows shipments about one hundred cars less than the preceding week. It is not likely that there will be more than twenty-five or thirty cars yet to go forward and most, if not all, of these it is expected will be shipped during the early part of next week.

Citrus Market

LOS ANGELES, Nov. 23, 1910.

The shipment of green fruit continues and in quantity with a still further depressing influence than chronicled last week. $1.65 to as high as $2.00 f. o. b. California is, however, being received. So far navel shipments have practically all been from either Butte or Tulare counties. Southern California shipments from a very few sections may begin the last of this week, and all will probably continue shipping from now on. It is probable that by the first of December that 90 per cent of the northern and central output will have gone to market.

Lemons are lower and it is probable no more fancy prices will prevail until the warmer season opens. The fruit is of exceptionally fine quality and from present indications next spring's cut will be very heavy.

Shipments.

Shipments of oranges since November 1st, 1910, 73 carloads, of lemons 260 carloads, total of all citrus fruits 333. To same date last season, 151 cars oranges, 156 lemons and total 307 cars citrus fruits.

NEW YORK, Friday, Nov. 18.—Three cars of Valencias and 3 cars of lemons were sold. The market was higher on Valencias and easier on lemons. The weather was clear and fair.

VALENCIAS—	Avge.
Pointer, A C G Ex	$4.55
Evergreen	3.40
Beauties	2.85
Standard, Sd., Nat Og Co.	2.15
Old Mission, Fy, C C Chapman	8.85
Old Mission, Ch, C C Chapman	7.55
Golden Eagle, Sd, C C Chapman	5.55

LEMONS—	Avge.
Pet	$4.25
Marguerite	4.40
Sunrise	3.95
Independent, Fy	4.05
Independent, Ch	3.25

CINCINNATI, Friday, Nov. 18.—Cold. Market weak on Valencias, advancing on lemons; steady on Floridas. One car Valencias, 1 car lemons, 5 cars Floridas sold.

VALENCIAS—	Avge.
Coyote, Ok Ex	$2.65

LEMONS—	Avge.
Bridal Veil, Or, Limoniera Co	$5.25
White Cross, Limoniera Co	4.35
Loma, Ch, Limoniera Co	5.05

FLORIDAS—	Avge.
Brights	$1.60@2.35
Russets	1.75@2.35

ST. LOUIS, Friday, No. 18.—Cool. Market firm. Two cars Valencias sold.

VALENCIAS—	Avge.
Searchlight, S S Ex, Orange	$3.90
Navajo, A H, Casa Blanca	3.00
Victoria, A H, Casa Blanca	3.30

PHILADELPHIA, Friday, Nov. 18.—No California fruit sold. Market firm on good stock. Seventeen cars Floridas sold. Oranges, $1.20 to $2.85; average, $2.05. Grapefruit, $1.55 to $3.85; average, $2.50.

BOSTON, Friday, Nov. 18.—Three cars sold. Market easier. Clear and cool.

VALENCIAS—	Avge.
Quail, O K Ex	$3.50

LEMONS—	Avge.
Quail, O K Ex	$5.95
Squirrel A H Ex, Prenda	4.70
Prong Horn, O K Ex	5.15
Palm Tree, A H Ex, Prenda	4.00

PITTSBURG, Friday, Nov. 18.—One car sold. Cold. Market steady on oranges.

VALENCIAS—	Avge.
Owl, O K Ex	$2.40

CLEVELAND, Friday, Nov. 18.—Two cars Valencias and 1 car lemons sold. Market unchanged. Cold, snowing.

VALENCIAS—	Avge.
Coyote, O K Ex	$3.05
Blossom, X C, Red Mu Og Assn	2.30
Camellia, X F Red Mu Og Assn	2.70
La Belle, Sd Red Mu Og Assn	1.95

CHICAGO, Friday, Nov. 18.—Lemons—The market is well supplied. Boxes, California, choice to fine, $4.75@5.50.

Oranges are in good supply, taking the aggregate of the different kinds now here. Demand is moderate, not large. More or less of the new fruit from different parts comes rather green and has to be ripened. Boxes, late Valencias, extra choice, 96s, $3.25; 126s, $3.75@4.00; 150s-216s, $4.00@4.50; choice, 96s, $3.00@4.25; 126s, $3.25@3.50; 150s-216s, $3.75@4.00; navels, California, 96s, $2.25@2.50; 126s, $2.75; smaller sizes, 3.00@3.25.

NEW YORK, Monday, Nov. 21.—Seven cars Valencias, 4 cars Navels and 2 cars lemons sold. Market doing better, stronger on good colored stock.

VALENCIAS	Avge.
Old Mission. fy, C C Chapman	$9.05
Old Mission, ch, C C Chapman	8.10
Golden Eagle, sd, C C Chapman	5.70
Lady Rowena	4.20
Evergreen	3.30
Beauties	2.45
Commander	2.35
Captain	1.85
Corporal	1.65
Star, xc, C C U	2.60
Planet, S S Ex	6.65
Searchlight, S S Ex	4.10
Pet, S A Ex	4.30
Quail, O K Ex	3.90

NAVELS—	Avge.
Heart of California	$2.75
Diamond Mountain, fy, Randolph	2.85
Mariposa, fy, Earl Fruit Co	2.50
Mariposa, Earl Fruit Co.	2.35

Lemons—Independent, $3.60; Fancy, $2.95; Quail, $4.50.

ST. LOUIS, Monday, Nov. 21.—Weather cool. Market firm on good fruit. One car Navels, 1 Valencias and 2 of lemons sold. Two cars on track.

VALENCIAS	Avge.
El Capitan, S A Ex	$3.15

LEMONS—	Avge.
Excellent, S P Ex, Santa Paula	$4.45
Wave, S P Ex(Santa Paula	4.25
Blue Jay, O K Ex	3.55
Sunside, S P Ex, Santa Paula	4.20
Coyote, O K Ex	4.15
Greyhound, S A Ex	4.10

Navels—Bear and Eagle, T C Ex, Lindsay, $2.60.

CLEVELAND, Monday, Nov. 21.—One car Navels, 1 car Valencias and 2 cars lemons sold. Market lower on Valencias, unchanged on lemons. Cloudy. Raining.

LEMONS—	Avge.
Pet, S A Ex	$4.90
Trail, Sierra Madre Lam Cit	4.30
Greyhound, S A Ex	4.05

VALENCIAS	Avge.
Quail, O K Ex	$3.30
Coyote, O K Ex	2.50

Navels—Blue Label, C C Ex, Lindsay, $2.60.

Ten cars Floridas sold, $1.50 to $3.00; average, $2.30 lower.

PHILADELPHIA, Monday, Nov. 21.—One car lemons sold. Market firm on good stock, but prices low on account of quality of fruit.

LEMONS—	Avge.
Moose, O K Ex	$4.65
Pronghorn, O K Ex	4.40

Thirteen cars Floridas sold. Oranges, $1.15 to $3.05; average, $1.75. Grapefruit, $1.50 to 4.60; average, $3.10.

PITTSBURG, Monday, Nov. 21.—Three cars sold. Market steady on oranges, easier on lemons. Cool.

VALENCIAS	Avge.
Coyote, O K Ex	$3.05
Owl, O K Ex	2.45

LEMONS—	Avge.
Quail, O K Ex	$4.55
Circus, xc, Sparr Fruit Co	4.00
Naralimo, Or, Sparr Fruit Co	4.40

BOSTON, Monday, Nov. 21.—Five cars sold. Cool and clear. Market unchanged.

LEMONS—	Avge.
Rey, S T Ex, Fernando	$4.95
Silver Lemon, A H Ex, Prenda	6.15
Marguerite, xc, Earl Fruit Co	5.55
Tunnel, S T Ex, Fernando	4.15
Squirrel, A H Ex, Prenda	5.70
Sunrise, sd, Earl Fruit Co	4.25

VALENCIAS	Avge.
Evergreen	$3.40
Camellia. xf, Red Mu Og Co	2.15
Beauties	2.90
Redlands Pride, xc, Bryn Mawr	1.65

CINCINNATI, Monday, Nov. 21.—Weather cool. Market steady. Six cars Floridas sold.

Brights, $1.60 to $2.60; Russets, $2.00 to $2.60. Next sale, Friday.

CHICAGO, Monday, Nov. 21.—Lemons are quiet. They are in fair supply and easy. Boxes, California fancy 300s, $5.00@5.50; 400s, $4.50@5.00; extra choice, 25@50c discount.

Oranges—California Navels sell very well, but all others are slow. There are now fairly good offerings. Boxes, late Valencias, extra choice, 96s, $3.25; 126s, $3.75@4.00; 150s, 216s, $4.00@4.15; choice 96s, $4.00@4.25; 126s, 3.25@3.50; 150s, 216s, $3.75@4.00. Navels, California, 96s, 2.00; 126s, $2.75; smaller sizes, $3.00.

DILL AS A MONEY CROP.

In the central part of Long Island, farmers grow a good number of acres of cabbage, cucumbers for pickles, peppers, also green tomatoes for pickling, and dill is one of the main articles in pickling all of the above with the exception of cabbage.

The dill seed is sown in rows two and one-half feet apart the same as carrots about May 15. Use care to secure the mammoth variety as the dwarf is not profitable. Keep free from weeds and keep well cultivated until the dill is fit for market, which generally is from August 1 to September 1. The demand usually exceeds the supply, for same is generally contracted for by local pickling plants at from $35.00 to $60.00 per ton. An acre yields from one to three tons, depending on season and care given same. The Mammoth Dill grows from two and one-half to four feet in height and is pulled up with roots, put into bundles of from 25 to 100 pounds, put on wagon and weighed at pickling plant.

Any farmer being near a pickling plant could add to the yearly income by planting some of this valuable herb. All of the dill stalk is used with the exception of the roots and six inches of the stalk.—Market Growers Journal.

Feed the birds. You'll need 'em next bug time.

California Cultivator

Clubbing Price List

FOR THE SEASON 1910-'11

Prices are Good to Oct. 1, 1911

This magazine price list is prepared annually for the convenience and benefit of Cultivator subscribers. The prices given allow our readers the benefit of the lowest figures possible, in return for which, all we require is that to all orders a year's subscription to the Cultivator (class 18) be added at 90c (regular price $1.00 per year).

This year the pricing of various combinations of magazines is a simple matter; all are listed according to class number and this class number multiplied by 5 gives the cost price.

EXAMPLE:

Class No.		Regular Price
20	American Magazine	$1.50
16	Delineator	1.00
37	World's Work	3.00
18	Cultivator	1.00

91X5=$4.55. Club price for all. Amount saved on this club, $1.95.

We desire to especially call attention to this complete list of the most popular magazines. We can, however, supply any periodical published, at the lowest price, and any not listed here will be quoted on request. Let us make you a price on any combination you may desire.

Periodicals in any combination may be ordered to the same or different addresses. Foreign or Canadian subscriptions are extra on account of added postage and prices must be gotten by correspondence. Subscriptions may be either "new" or "renewals," but it is important that this information be given in each case.

Books—Send us a postal for our list of agricultural books which we supply subscribers and which we recommend as most suited to California conditions.

Don't overlook this special:

The California Cultivator (weekly)
The Rural Californian (monthly) } Both one year for $1.50

Our Money-Saving Combinations:

The price of the Cultivator and any single magazine may be obtained by adding 90c to the class price of the magazine desired.

Make up your orders from the following, noting that the class numbers multiplied by 5 gives the cost price. Also bear in mind that all orders must include a year's subscription to the Cultivator (class 18) at 90c.

MISCELLANEOUS

Class No.		Reg. Price
19	American Sheep Breeder	$1.00
47	Automobile	3.00
8	Boys' World	.50
23	Breeders' Gazette	1.75
27	Cassell's Little Folks	1.50
77	Century Magazine	4.00
65	Country Life in America	4.00
12	Designer	.75
8	Girls' Companion	.50
70	Harper's Weekly	4.00
70	Harper's Magazine	4.00
8	Ladies' World	$0.50
17	Human Life	1.00
9	McCall's Magazine	.50
12	Modern Priscilla	.75
15	National Monthly	1.00
70	North American Review	4.00
47	Outing Magazine	3.00
8	Reliable Poultry Journal	.50
40	Scientific American	3.00
60	Scribner's Magazine	3.00
57	St. Nicholas	3.00
15	Woman Beautiful	1.00
37	World's Work	3.00

CLASS 16.

Amer. Agriculturist	$1.00
Black Cat	1.00
Cooking Club Mag.	1.00
Delineator	1.00
Health	1.00
Housekeeper	1.00
Judge's Library	1.00
Judge Quarterly	1.00
Orange Judd Farmer.	1.00
Pacific Monthly	1.50
Pictorial Review	1.00
Progress Magazine	1.00
Sis Hopkins	1.00
Uncle Remus	1.00
World's Events	1.00

Any two $1.60

Any three $2.40

Any four $3.20

Any one with 1 of class 17 $1.65

Any two with 1 of class 17 $2.45

Any one with 1 of class 20 $1.80

Any one with 1 of class 22 $1.90

CLASS 17.

Amer. Bee Journal	$1.00
American Boy	1.00
Am. Primary Teacher.	1.00
Boston Cooking School Magazine	1.00
Camera Craft	1.00
Children's Magazine	1.00
Cosmopolitan	1.00
Dressmaking at Home	1.00
Electrician and Mechanic	1.00
Health Culture	1.00
Human Life	1.00
Little Folks	1.00
Motor Magazine	1.00
National Sportsman	1.00
Nautilus	1.00
N. Y. Tribune Farmer	1.00

Any two $1.70

Any three $2.55

Any four $3.40

Any one with 1 of class 16 $1.65

Any two with 1 of class 16 $2.50

Any one with 1 of class 20 $1.85

Any one with 1 of class 22 $1.95

CLASS 20.

American Magazine	$1.50
Columbian Magazine	1.50
Good Housekeeping	1.25
Harper's Bazar	1.25
Metropolitan Magazine	1.50
Pearson's Magazine	1.50

Any two $2.00

Any three $3.00

Any two with 1 of class 35 $3.75

CLASS 22.

Ainslee's Magazine	$1.80
American Magazine (after Feb. 25, 1911)	1.50
Amer. Photography	1.50
Baseball Magazine	1.50
Country Gentleman	1.50
Etude	1.50
Everybody's Magazine	1.50
Field and Stream	1.50
Garden Magazine	1.50
Hampton's Magazine	1.50
McClure's Magazine	1.50
Musician	1.50
National Magazine	1.50
Photo Era	1.50
Shield's Magazine	1.25
Short Stories	1.50
Smith's Magazine	1.50
Sunset Magazine	1.50
Taylor Trotwood Mag.	1.50
Teachers' Magazine	1.25
Technical World	1.50
Travel Magazine	1.50
Woman's Home Comp.	1.50
World To-Day	1.50
Young's Magazine	1.50

Any two $2.20

Any three $3.30

Any four $4.40

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Any two with 1 of class 35 $3.95

Any two with 1 of class 16 $3.00

Any two with 1 of class 17 $3.05

Any two with 2 of class 17 $3.90

CLASS 25.

Farm Journal .10 yrs.	$1.50
Office Appliances	1.50
Physical Culture	1.50
Ladies' World.) Modern Priscilla)all 1yr Pictorial Review)	2.25

Any one with 1 of class 35 $3.00

Any one with 1 of class 22 $2.35

CLASS 35.

Current Literature	$3.00
Lippincott's Magazine.	2.50
Recreation	3.00
Review of Reviews	3.00

Any two $3.50

Any three $5.25

CLASS 45.

House Beautiful	$3.00
House and Garden	3.00
Mining World	3.00
Suburban Life	3.00

Any two $4.50

Any one with 1 of class 16 $3.05

Any one with 1 of class 17 $3.10

You may add to any Club

All Story Mag.	$1.00	Scrap Book	1.00
Argosy	1.00	Sat. Eve. Post	1.50
Ladies' Home Jr	1.50	Munsey's Mag.	$1.00

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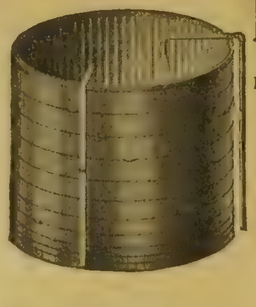
115-117 N. Broadway Los Angeles, Cal.



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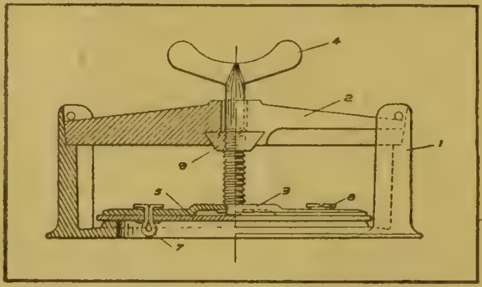
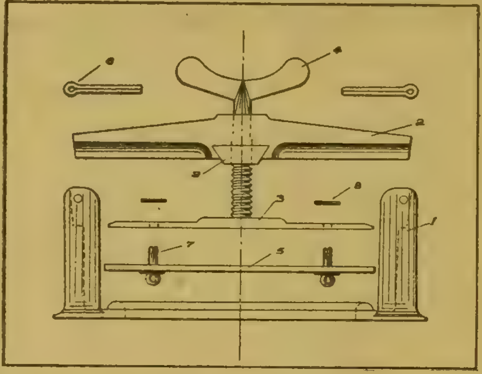

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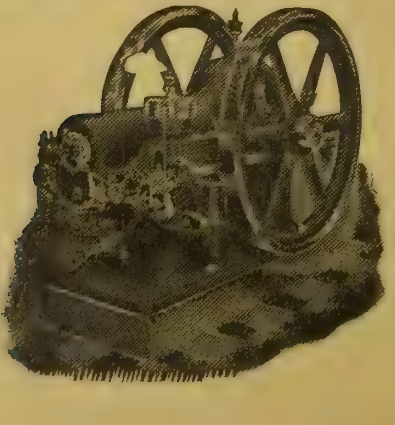

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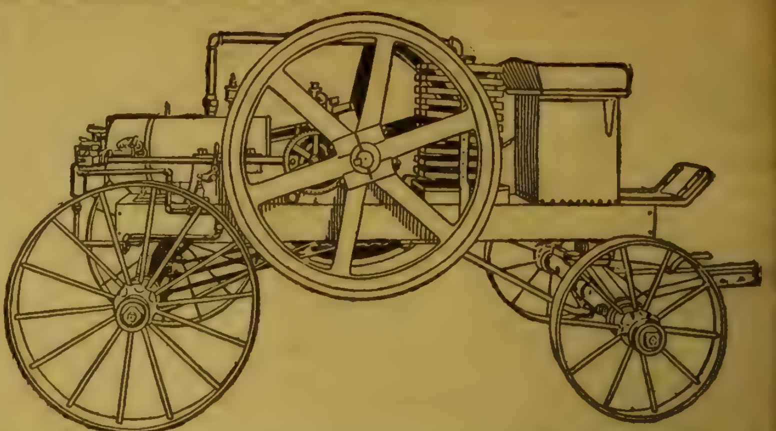

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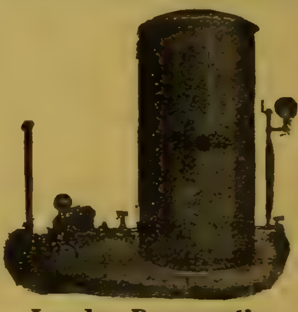
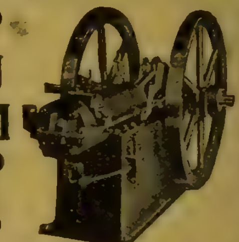
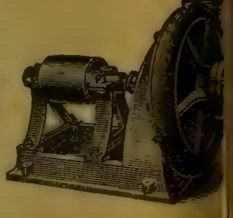

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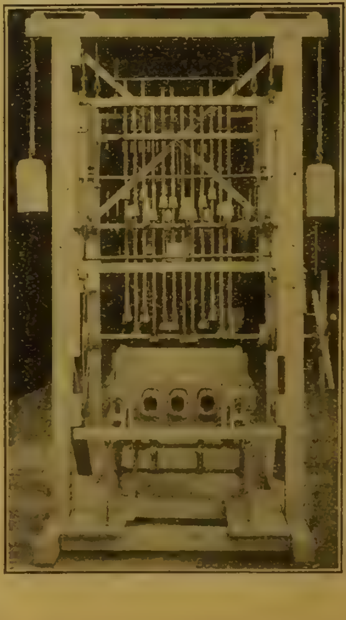

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California Cultivator

An Illustrated Weekly Magazine, Devoted to the Rural Home and Ranch. One Dollar per Year.

Los Angeles December 1, 1910 San Francisco

CALIFORNIA SWEET PEAS.

There is possibly no annual that finds conditions of soil and climate more to its liking in California than the sweet pea. Being susceptible to a warm and constant sun, a long growing season and a fertile soil, it attains a growth and robust development of seed unknown elsewhere. The illustration shows the quality of California blooms, and pictures one of the late introductions of the Howard & Smith Nursery of Los Angeles, Cal.

The LaVerne Rotary Cultivator

The principle of Rotary Cultivation, is an entirely new one; the action of the teeth in the soil being different from solid, cut away Discs or ordinary Cultivators. It carries absolutely no soil with it and can be used at a greater depth with less draft than any other cultivator on the market today. The tool, works so close to the ground with no wheels or other attachments to catch limbs or tear off fruit, that it can be used to cultivate under the trees, where ordinary tools do not reach. The manner in which the teeth enter the soil, tends to keep them sharp and one set usually lasts a season.

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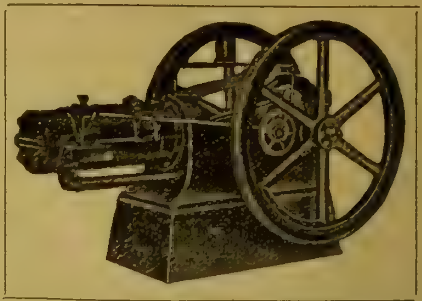

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California Cultivator

Vol. XXXV—No. 22 Los Angeles, California, Thursday, December 1, 1910 Subscription $1 a Year

Features of Vineyard Work in San Joaquin Valley

A New Insect Destroyer Described by Mrs. Minna E. Sherman; Also Other Vineyard Practices Which Aid in Producing Fine Grapes.

Three troubles have been a source of loss in this section of the vineyard country. The vine hopper, mealy bug and mildew have all been more than usually troublesome. The mildew and hopper are familiar troubles, the mealy bug is rather a new enemy to the vine. The vine hopper is a small whitish little fellow with a peaked back when his wings are closed. He fills the air at times when a vine is stirred up. I have seen them this year so numerous that the horse closed his eyes and I closed mine and we staggered into a high vine, to the destruction of the mud-guards of the phaeton. This season was as bad for hoppers as any I have ever known. The effect of the hoppers is weakening on the vines, and in vineyards where they have prevailed for several seasons, the vines show a serious check in their wood growth. The leaves turn brown in July and August and the fruit hangs exposed to the sun's rays. In cases not quite as bad as this, the berries on the bunches are often seriously marred by the excrement of the hopper. The effect on the vine generally is about as though it was pruned in August. The effect on the shipping fruit is to make the grapes soft and not good carriers.

Sprays.

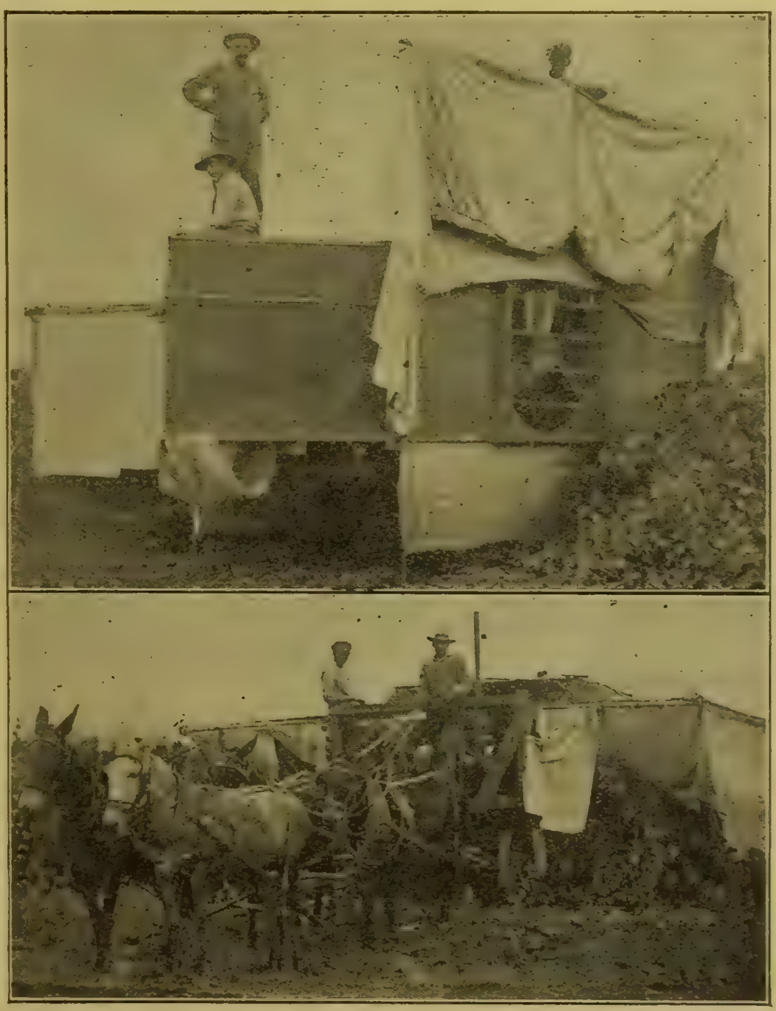
Sprays have not proven any good, as the hopper is a sucker and anything that will prevent his getting the juices from the leaves will destroy their usefulness to the growth of the vine. Various arrangements of traps have been devised. One was drawing a truck with a series of sticky fly paper on the sides. Another way was formed with a box trap put over the vines and then shaking them up, when the hopper flew to the top to the light. Neither of these devices proved valuable in securing more than a few of the hoppers. They should fly right to be caught, but they did not.

Driver's Hopper Catcher,

The picture illustrates fairly well the working and form of this machine that has been patented by Mr. C. B. Driver of Dinuba. The Farmers' Institute force was taken out to see the machine in operation. It was late in the season to see the full amount of hoppers sucked into the machine. It took all that were there, however, successfully. The device consisted of a large cage-like box made of screen wire in the back and on the two sides directly opposite the fans is used an inch mesh wire to allow the hoppers to pass in more readily. The fans, propelled by the engine inside, draw the hoppers in with great force. The suction is very strong and when the hoppers are drawn into the cage they are forced back against the wire screen and then fall dismembered to the bottom of the wagon, onto a table that slants to a gutter that runs to one corner, where they drop through an aperture into a suspended sack. A careful examination of the pictures will show these details.

Curtains.

The hinged arms carrying the curtains extend out over a row of vines on each side of the wagon The first curtain is split and yet trails over and stirs up the hoppers. The side curtain holds them within reach of the suction of air while the trailing rear curtain forces them forward into the air. We got under these curtains ourselves and went along to see the machine in action. A short trip was enough, as every hair was on end and everything loose was pulled out of place. We were satisfied that the suction was enough to draw in Mr. Hopper to his death. We then examined a vineyard that had had the machine used on it early in the season. Every leaf was green and perfect and vigor was very noticeable over the whole place. Across the road was an untreated vineyard. The foliage was brown and the tops of the vines completly denuded. This machine did its work successfully, and to all appearances it is easily enough operated to be successfully handled by the ordinary enginneers employed on the ranch. On an eight-acre vineyard there were caught forty-four pounds of hoppers in one trip. These were estimated to represent several million individuals. The computation was made carefully by having the druggist weigh out a grain of them and then counting the victims. These were multiplied by the number of grains in the total amount and the estimate arrived at.



HOPPER CATCHER.

Side view showing curtain raised, fan and protecting screen over fan. One curtain in place.

Front view showing both hoods ready for use and showing the manner in which they cover staked vines.

This is rather under than over the correct amount, as many of the hoppers are so ground up that they were counted out among the dust and other waste gathered in by the fans.

Mealy Bug.

This new pest has taken to the vineyards for the first time in noticeable quantity. Even now not more than half a dozen cases are reported. One vineyard that was considered as a total loss early in the season produced a full crop. The owner thinks it is the work of the parasitcal insect introduced by Horticultural Commissioner Schell and Mr. Carnes of the State Insectary at Sacramento. As the crop of this vineyard of Emperors is worth each year about $12,000 it is a considerable matter. The mealy bug was discovered at work in several places, but not as great a number as in this one vineyard of trellised vines. We saw the debris left by the mealy bug, but could find none at work, nor could we find any eggs. One season, as Mr. Schell says, is too short a time to make any definite assertions as to control of this pest. The outlook is certainly a very promising one.

Nature's Way.

The principal objection to the control of one insect pest by its natural enemies is that nature does not recognize any one of them as unworthy of life. She saves them all by never allowing any one to outrun the other. As soon as one family becomes too prosperous, enemies attack it and bring it down to a reasonable number. Increasing the food of any particular insect may for a season increase the insect itself, but by the next season its enemies have felt the increased amount of food provided for them and increase enough to control the surplus. It goes all the way down the line in this way.

Orange Trees.

The mealy bug is at home on the orange and lemon tree. In the town of Fresno they have existed for years without spreading out into the country to do mischief. One gentleman had turned over to Mr. Schell his trees around the house to have spraying tried out as a remedy on them. They had been sprayed to the limit of toleration. There are still a few mealy bugs left, enough to start into active life next year. The trees had been sprayed at an expense much greater than the ordinary vineyardist or orchardist could expect to find profitable to follow up. Then we next visited the tree that was being made a happy home for the predaceous insects. They were busy at work and we could see where they had killed the mealy bugs, but the beetle is too tiny itself to be readily visible to the eye. These mealy bugs were leaving eggs behind them in quantity, so that there is no danger of starvation for the parasites. The carrying over the winter of these tiny strangers is quite a problem, as they come from tropical Mexico, and it is doubtful if they can live through a Fresno winter.

Mildew.

In meeting this trouble we have only to be diligent in the use of spraying. The fact is that the Bordeaux mixture, or lime and sulphur, sprayed on the vines after pruning does control the mildew in a great measure. It does, but it should not,

(Continued on Page 551)

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HORTICULTURAL LAW.

An Address by E. O. Essig Before the Claremont Horticultural Club.

In order to understand the benefits derived from the law of 1910, as well as its defects, it would be well to give first a summary of the new law and the law it replaced. The law of 1907 provided that:

A. Appointment.

The provision for a board of horticultural commissioners consisting of three members, to be brought about as follows:

1. A petition to the County Board of Supervisors, signed by 25 resident fruit growers and possessors of orchards calling for the appointment of such a Board.
2. Supervisors appointed Board after receipt of petition.

B. Removal.

1. First a petition to the Boards of Supervisors signed by 25 resident fruit growers.
2. Removal on hearing and conviction.

C. Duties of Board of Horticultural Commissioners.

1. Cause of inspections to be made.
2. Direct the control and extermination of noxious pests.
3. Keep record of official duties and make official reports.

D. Powers.

1. To divide county into districts.
2. To appoint inspectors in these districts.
3. Force eradication of insect, fungoid, and weed pests.

E. Salaries.

1. For members of Board of Horticultural Commissioners, $4.00 per day.
2. For inspectors, $2.50 per day.

The law of 1910 relating to Horticultural Commissioners provides:

Appointment—First a petition to Supervisors as under old law.

Appointment by Supervisors on following conditions: Applicant must be a resident citizen of the county. Applicant must first be nominated and recommended by the State Board of Horticultural Examiners, which is appointed by the Governor to examine said applicants for the position of horticultural commissioner. This may be accomplished only as follows: Applicant pay a fee of $5.00 to defray part of the expenses of the Examining Board. Appear before a member of the Examining Board and take a written examination. Pass the examination with at least 80 per cent of the questions satisfactorily answered.

Removal, duties and powers same as under old law.

3. Appoint, with consent of Supervisors, two deputy commissioners.

Salaries—For Commissioners, $6 per working day; for Deputy Commissioners, $5; for inspectors, $3.50.

As a working basis for the consideration of the law of 1910, I wish to take up the discussion under the three following main heads, viz.: Good Points, Doubtful Points, and Bad Points.

Good Points.

Without doubt the idea of a single official head to direct the Horticultural work of the county is far ahead of the old Board of Commissioners, in which the power was vested in three members.

It is beneficial to the Commissioner because it individualizes the work and gives him free jurisdiction in all matters pertaining to the work. The responsibility rests upon one man only and it is not necessary for him to consult a co-ordinate in every legal step of his profession. He becomes responsible to the growers alone and does not need to answer for other members of a board. He selects his own deputies, thus avoiding what, under the old law, might prove to be a lack of harmony and united work. The increase in salary is important only in so far as it draws capable men to the field. It is the only thing that will do this.

The inspector is not compelled to cater to the whims of three supervisors and necessarily finds his work more agreeable. Being responsible only to the man who has the power to appoint and remove him, he knows what is required of him. It gives more definiteness to his position. The increase in salary here has also the same desirable effect of drawing more thoroughly equipped men to the work. Some of the inspectors are today men of much higher qualifications than most of the commissioners under the law of 1907.

To benefit the growers was, of course, the desired aim in changing the old law, and all of the above benefits certainly improve conditions for him very directly by drawing more able commissioners to the work. The grower is in a position now to hold the commissioner responsible for the conditions of the county. The burden cannot be shifted to another as has often been the case in the past. In other words, the commissioner may be held responsible by any orchard owner for the specific conditions of his orchard.

The civil service idea of making it necessary for all county horticultural commissioners to satisfactorily pass an official examination is indeed commendable. So long as the entire matter is kept out of politics, the position is sure to be filled by the most efficient applicant. Too much stress cannot be laid upon the matter of getting thoroughly trained men to direct the work which is so important to all lines of agricultural and horticultural interests in this state.

The examining board with its present powers may become a great factor in placing a man in the right place. There are many complex and doubtful problems confronting the growers which may easily be settled by giving them the necessary commissioner, and there is no other method of obtaining this man except upon the proper recommendation of this board. In case one applicant passes the examination at 80 per cent, another at 85 per cent and the third at 95 per cent, there should be no doubt about what is expected from the examining board, when it makes its report to the County Board of Supervisors. There are at present several notorious cases where the best equipped man has been shoved aside to give place to a thoroughly incompetent and inactive applicant, who happened to have a political pull. I believe that the examining board should state all those who passed very impartially, but it should be strong in its statement as to which of the applicants is the most capable for the position in question.

This right, I believe, is specifically stated in the letter of the law.

Doubtful Points.

Most of the points under this heading are placed in the form of questions which are very vital in the workings of the law, and which need to be solved in the near future, if we are to receive the most good from its enforcement.

Concerning the State Board of Horticultural Examiners, should the appointment of this board be so freely placed in the hands of the Governor, without some restrictions? I ask this question because I know of a thoroughly competent man who was endorsed by exchanges and prominent fruit growers from at least one hundred localities. In the face of all these written requests to have this man placed upon the Board of Examiners, the personnel of the board was changed twice and in both cases the choice of so many exchanges and fruit growers was ignored by the one who appointed the members. Now should such a condition exist?

Should there not be a qualification imposed upon the members of this examining board? Should an inspector examine applicants for Commissioner without being qualified by a similar test to do so? What standard is used by the board for determining the questions to be given in each examination? Is there not liable to be a great difference in the various counties requiring practically the same qualifications for commissioners? Is it not possible to adopt a standard to be fixed according to the principal horticultural interests of the state? The questions should be such as are usually given to students in entomology, mycology, botany, and general agriculture at the State University and other similar institutions in the state.

Bad Points.

As to residence qualifications I may say it makes absolutely no difference where a man comes from, or where he has lived prior to becoming commissioner. Ability should be the only qualification. This clause is certainly hard to explain.

As to Deputy Commissioners, this matter was evidently intended to satisfy certain political views and, fortunately has been adopted by only a few counties. Three good commissioners may be able to do a great deal more work than one but the complications would be greater, and the matter of shifting the responsibility and dividing the work would be nearly the same as under the old law. Then, too, it might be possible to force deputies upon the commission through the supervisors as a means of defeating his policies. The domination of deputies and the conflicts with the inspectors are inimical to the best service. Good inspectors with the right kind of direction are sufficient to carry on the work of the largest and most productive counties, without the added expense of deputy commissioners. To my mind these two offices are simply political plums and all County Boards of Supervisors should be informed concerning them.

Regarding Salaries.

The Board of Horticultural Examiners should not be expected to give so largely of their time without an adequate compensation, other than their present traveling expenses. The work is certainly very important and competent men should be sought for the positions and paid accordingly.

The salaries of the Horticultural Commissioner and his inspectors should be placed upon the same basis as those of other county officials, and not constantly subject to the whims of the County Supervisors, who are often inclined to dictate as to the number of days a man may work.

A fixed yearly salary would make the work more desirable and would tend to draw better men to these positions.

Something must be done regarding this phase of the work, for institutions of learning and corporations are paying much larger salaries for men equipped for this work, and these institutions and corporations as well as the Federal work, are getting the best men simply because they are paying more for the service rendered. The importance of the work is without question. Men of ability are not plentiful, so the compensation must be made equal to that paid for similar services elsewhere. We have a number of examples in this state of good men being taken from the state and county work by university experiment stations and general Federal research.

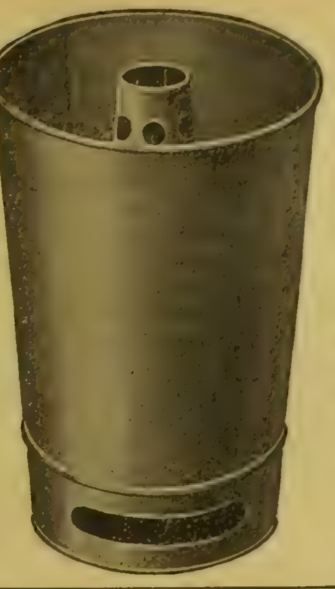
In the administration of the law there are many weaknesses. Under the head of political influence may be placed most of the defects of this law from the time it was first introduced until the present day. The undesirable features spoken of above are simply the results of political jobbery. In the administration of this law, which might have been entirely beneficial, politics wields an influence great enough to completely control the affairs of some of the most important citrus and horticultural districts in the state, by placing incompetent men in the most responsible positions.

The entire influence of politics must be removed from this work, if we are to get beneficial results. Thoroughly equipped men do not need to cater for political pulls, and they will have nothing to do with a work which makes it necessary for them to do so. The need is not for politicians to hold these offices, but for men who know the farm, the orchard, and the means of making them the most productive, and most effectively contributory to the welfare of the state and nation. Such men are not found among politicians.

Surely something can be done to place the horticultural and agricultural work upon a purely civil service basis which may do away with politics for all time. The Federal Department of Agriculture or the state experiment stations cannot be operated on any other basis, so that it would be absurd to think that this could be.

She that will eat her breakfast in bed,
And spend the morn in dressing of her head,
And sit at dinner like a maiden bride,
And talk of nothing all day but of pride;
God in His mercy may do much to save her,
But what a case is he in that shall have her.
—Poor Richard.

The Italian Vineyard Co., near Cucamonga and Ontario, San Bernardino county, estimates a loss of 5,000 tons of grapes because of hot winds of early spring and heavy northers of the last few weeks.



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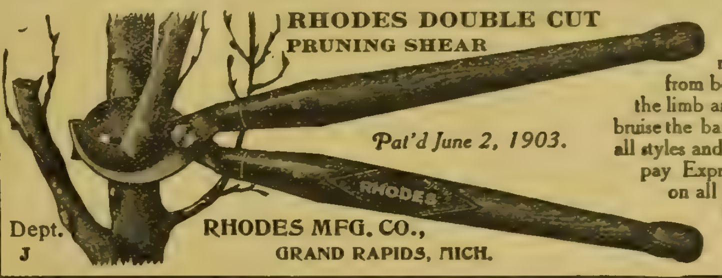

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A YEAR'S SUCCESS.

The standardization of green deciduous fruits has had its first year's trial. It has not yet placed the market conditions in the perfection class but great good had been accomplished. The meeting to hear reports at the close of the season recently held at Newcastle showed that both growers and shippers realize the advantages gained and are determined to stay by it. Of course a few changes in requirements will be made but on the whole the plan was unanimously endorsed.

The committee on standard consisted of George D. Kellog, chairman; H. E. Butler, first vice-chairman, and W. H. Tudsbury, second vice-chairman; H. H. Bowman, secretary, and Charles Carlston, treasurer. This committee presented a report from which we quote:

Committee Reports.

Proceeding the committee said in its report:

"There being no statutory laws nor any precedents to follow an agreement was drawn up and presented for signatures, which included standardization of fruit as adopted at the mass meeting held in Newcastle, November 22, 1909.

"Our work was organized upon business principles with a check on every financial transaction; proper books, receipts, vouchers and checks were provided. The agreement was presented for signatures and we are pleased to note that every shipping firm doing business in Placer county by their principals and by the manager of each branch house readily signed the same together with several of the prominent growers of the county.

"Placing ourselves under mutual agreement and the moral obligation to stand together was the secret of whatever success that we may have been able to accomplish.

"Inspectors were appointed for the season under agreements to be known as independent inspectors for each shipping district in the county. Their salaries were fixed at $100 a month and they were held to a strict accounting for their services.

"Before the carload shipping season fairly opened the inspectors were sent around to the ranches to advise the growers of the movement and to make them acquainted with the standards that had been adopted for the packing of fruit, and to encourage them in the thinning of fruit wherever it was necessary for the best interests of the crop and when the car shipments began in earnest they were stationed under the direction of the supervisory inspectors, where they should inspect every box of fruit to be shipped.

Funds Were Necessary.

"To provide for these it was necessary to raise a fund which could only come from an assessment on each box of fruit. The authority given by the mass meeting to collect half a cent a box for each package sent in carload shipments was modified by the supervisory inspectors to a quarter of a cent a box.

"As some of the growers hesitated upon signing the agreement on account of the assessment we found ourselves embarrassed, inasmuch as the mass convention had voted that this should be paid by the growers. This difficulty was readily overcome on the part of the fruit shipping houses agreeing to absorb that assessment. This quarter of a cent per box was collected from the several fruit shipping houses upon the basis of June and July shipments, which gave us a sufficient amount of money to carry the work through to the end of the season and by action of the supervisory board our treasurer was instructed not to collect anything further for the months of August, September or October. By this you will see that our entire business has been transacted upon two months' shipment only, and at a quarter of a cent a box in carload interstate shipments, and are glad to report to you a balance on hand of $354.80, which we are ready to turn over to those who provided this fund, and await your instructions as to the distribution of the same.

"In establishing a brand for the standardization of fruit we adopted a uniform brand, signifying that there was not over 72, 84, 76 or 108 peaches in a box.

"To the growers and shippers who signed the agreement to stand by the standardizing rules, and who sustained the movement by their voluntary assessment, we desire to express our heartfelt thanks. The agreement proved to be a mutual and moral obligation resting between us, which proved as strong and effective as any law could possibly have made it, without which the reform undertaken could not possibly have been carried forward.

Changes Advocated.

"The experiences of the season have led us to believe that a state law, similar to some neighboring commonwealths, governing the whole situation would be very beneficial. We invite your discussion upon this point. The rules adopted at our mass meeting, governing the standards of fruit should be revised under the light of the experiences of the past year.

"Among other things a rule should be established that for a two and a quarter-inch peach, for instance, to make a box of 84, that the lower tier should be two and a quarter as well as the upper, but a box not over 72 should have no peach in top or bottom tier that would not come to the two and a half inch measurement. A revision of the plum rules has been found necessary, but on the whole we think that the standardizing rules will pretty generally hold good and correct.

"Receivers of fruit in the Eastern markets have been free in acknowledging an improved pack, which has contributed to better prices and an increased demand for Placer county fruits. Looking forward to a still greater improvement in the year to come, recognizing in our state commissioner of horticulture, J. W. Jeffrey, the party to whom we owe so much for taking the initiative in the standardizing movement, and thanking him for the interest that he has always shown in our supervision, and for his loyal support and wise counsel, we surrender our trust and ask to be relieved of it."

The same committee was appointed for another year.

APPLES INTEMPERANCE CURE.

The forbidden fruit of the Garden of Eden which brought sin into the world is now looked on as the means of driving sin out of the world. No less an august body than the Iowa State Horticultural Society is standing sponsor for the movement to remove the Garden of Eden stigma from the apple, says "Technical World."

When Eve, sorely tempted, partook of the luscious fruit which she had been forbidden to touch, she all unwittingly cast a blight on the apple which centuries of cultivation and two national shows at Spokane have been unable to remove. It has remained for an apple-loving country doctor to discover that not only can the world be fed on apples until it has secured the necessary calories of energy, but that the craving for liquor can be eradicated from the human body by the apples. As if this were not miracle enough, it is contended that General Grant might have won the siege of Vicksburg and the battle of Appomattox by munching on a Ben Davis, a Spitzenberg or a Jonathan, better than by puffing a cigar.

"The use of apples as an article of diet will much diminish, decrease and ultimately abate the appetite for alcoholic stimulants," declares Dr. Samuel Bailey. "That this is a fact could be proved in many instances if a little care, caution and vigilance were taken to thoroughly investigate conditions. As a rule, the habitual user of alcoholic stimulants is rarely a lover or consumer of apples. There seems to be a peculiar combination in apples, in the acid in them, or in the peculiar chemical combinations of the apple, that allays the irritation, or so-called appetite, produced by the use of liquor. I am also of the opinion that the keen appetite for tobacco is limited by the use of apples. I am thoroughly convinced that any man who is a lover of whisky and is in a condition where he thinks he must have a drink, will find that his appetite for the drink has been materially lessened, if not entirely abated for the time."—Green's Fruitgrower.

BARN-YARD MANURE.

Barn-yard manure increases the water-holding capacity of the soil; and instead of dumping the manure in some convenient, out-of-the-way place, or leaving in the yard to deteriorate, or to rot the structures against which it is so frequently piled, the farmer can not only save money, but at the same time conserve the moisture of his soil, by immediately spreading it upon his fields To get manure onto the fields quickly and effectively a manure spreader is very useful. Such implements are in daily use at University Farm.

Without moisture, fertility is of little consequence; and moisture without fertility will not produce satisfactory results. The soil must be supplied with organic matter to replace the plant food extracted from it by growing crops. This must come largely from the barn-yard; from plowing under the green weeds, etc. Without paying attention to modern methods of agriculture our Minnesota farmers will soon be complaining of wornout soil; the value of the land will drop, and the young men will look for a better chance elsewhere.—Minnesota University News.

Manure from the barn-yard adds humus to the soil; and humus acts like a sponge; retaining moisture in the soil, making it more capable of absorbing a heavy rainfall and of holding it there longer. The moral, therefore, is to save and carefully spread all barn-yard manure over the fields. Manure is worth dollars, and will put dollars into the farmers' pockets.

The texture of the orchard soil, no matter whether it be clay, sand or humus, may be greatly changed by correct cultivation.

APPLE CULLS.

There are just four places to put the small and defective apples—make them into cider, feed them to the hogs, box them by themselves and sell them for what they will bring or try and work them off in the middle of a box of good fruit.

Most fruit men try their hand at the last method first and lose their reputation for honesty and good money besides. This petty and always unprofitable fraud belongs with the watering of milk taken to the creamery, the putting of tailings in the middle of the wheat sack and the filing off of the old rooster's spurs to try and pass him off for a spring chicken.—Western Farmer.

The same sun, rain and dew falls upon the orchard of Mr. Careful as upon that of Mr. Slack, but Mr. Slack gets few marketable fruits. More depends on man and methods than upon Maine or Montana.—Farm Journal, And we may add even California.

SUMMER COVER CROP.

I was much interested in Mr. Prizer's article of last week, regarding orchard management. Mr. Prizer is a bright, energetic young man and a capital observer, as your readers have reason to know. He is taking great interest in cultural methods and will be more and more in evidence.

There are two suggestions in his article on which I wish to comment. He urges very wisely, as I did at the Pomona meeting, that tillage be carried close up to the trees, but says do it with a mattock. I know of large orchards where this is done, but I wonder if it would not be wiser to follow the course of Mr. C. C. Chapman and trim up so as to cultivate close up to the trees. This would be much cheaper, and then the cultivation would be not once in the year but at every cultivation. This is Mr. Hubbard's practice at San Fernando, and his trees say say "Thank you!" with emphasis.

Again, as to cow peas as the summer cover crop. It is hardly safe in this country to suggest summer cover crops without an emphatic word on the importance of much water. The crop and the trees will both call loudly for water, and unless the orchardist has it in quantity and will use it, without fail, he must never grow a summer cover crop.

The alfalfa in the orchard and a good crop of cow peas are all right, if water can be given in quantity. Else we must only grow winter cover crops. The trees must have all the water they need.

About Claremont the past season there has been unusual difficulty in getting the water to the roots, especially in late irrigations.

This "irrigation hard-pan" has held the water from the roots. Mr. Prizer's contention that this must be kept away by deep, early cultivation is most timely. A. J. COOK.

MENDOCINO COUNTY.

By N. E. Luce.

While touring the northern coast counties one must not forget the fact that Mendocino county is worthy a careful look, as to its agricultural and fruit growing adaptability. While the area of tillable land at present is limited, it is being added to each year and especially for the growing of fruits.

The valley surrounding Ukiah, as its centre is nearly twenty miles in length and from two to five miles in breadth. The bottom lands in this valley are rich, a dark loam soil and very productive. These lands are given over to hop growing, general farming and dairying. The foothill lands are adapted to fruits and walnuts, also vineyards which produce a very fine grape, extremely rich in sugar. Splendid apples are grown in the mountains, although in limited quantity.

Many new people are coming into this section and there is a spirit of progression taking hold of the ranchers that will work for the betterment of the county at large.

The valley around Willits is not as large as the one first mentioned, but contains a large area of good land, a great deal of which is under a good state of cultivation. I did not see the coast country but from best information there is quite a large amount of good agricultural and fruit land on the coast north of Fort Bragg, which on the completion of the railroad now under construction from Willits will be developed rapidly. In the north end of the county are many fine valleys of rich bottom land.

Round Valley is in the track of the railroad now being constructed to Eureka from Willits. This valley is partly occupied by the Indian Reservation. Then there is the Laytonville valley where there is a fine lot of land. Splendid fruit is raised in this section. Mr. Bowman has a three acre orchard whch produces apples that are as good as any I have seen, fruit the writer saw was very fine, color all that could be desired, texture of flesh and quality perfect, size and shape that makes a fruit that would score 100 at a Watsonville annual.

Transportation has been the drawback here and with the completion of the new railroad Mendocino county will rapidly come to the front as one of our best apple producing counties.

Stock raising is a very large industry here and I have seen sheep ranches with 5000 head of sheep, also large hog and cattle ranches. One condition I was sorry to see was the small attention paid to their roads and like some other sections the gospel of good roads ought to be forced home to them in a manner that would show them the value of having a system of first class highways.

The Pacific Fruit Auction Company has been formed in Los Angeles. Its mission is to be the handling of oranges and other fruits through the auction system.

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Trees: Book orders now for the following standards.

Peaches: Tuscan, Orange, Phillips, Levi, Foster, Triumph, St. John, Early Crawford, Elberta, Muir, Lovell, Fay-Elberta, and Salway.

Peaches have paid growers more profits in the last 25 years than any other fruit.

Apples: Alexander, Red Astrachan, Gravenstein, White Astrachan, Jonathan, Rome Beauty, Spitzenburg, Bellflower, Newton Pippin, Grimes Golden Pippin, Ortley, McIntosh Red, Winesap, Wagner, Winter Banana, Arkansas Black and many others.

Get in your orders now for Gravenstein, Jonathan, Spitzenburg, Yellow Newton Pippin, White and Red Astrachan, Alexander. They always sell out first.

Cherries: Black Tartarian, Bing, Black Oregon, Black Republican, Royal Ann, Lambert.

Cherries are great money makers. The above varieties always sell out early.

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The Ornamental Garden

THIS MONTH.

Watsonias which were planted early and are now coming through the soil or perhaps well up may be greatly benefited by a deep mulch of coarse manure, and the same is true of gladiolus which were ripened off early and planted for Winter bloom. In fact, this is a good season to apply mulch to any bulbs or plants. Even a Bermuda grass lawn is helped by a good application of manure now. We noted a few days ago a Bermuda grass lawn which last month was given a good application of commercial fertilizer and is now as green as blue grass. We recently noted in a Texas paper full instructions for the establishing of a Bermuda grass lawn. Should we give the Bermuda the same care we give to blue grass and clover we might have a beautiful green lawn most of the year. The Californian is often wild at the prospect of Bermuda taking possession of his lawn, but unless he gives it the best of attention and constant care he may as well wish for the Bermuda and enjoy it when it comes. However, where one prefers blue grass, this is the season for planting.

Pansies, stocks and such Dutch bulbs as have not already been planted may still be put out. Deciduous shrubs and ornamental trees may be planted during this and the next two months.

Eucalyptus trees may be pricked out of seed beds or flats and put into cans or larger flats.

Setting out of deciduous plants will also soon be in order. If leaves are all off the pruning may be done at once. Chrysanthemums which have finished flowering may be taken up and the beds given to other plants, and if the plants taken out are heeled in they will send out a quantity of shoots in the spring which may be reset for next year's blooming.

As soon as the cool weather has made them dormant, rose cuttings may be taken from the choicest plants. If placed in a slightly slanting position in sand and where the warmth of the sun has full effect they will soon granulate and be ready for rooting within a few weeks. Then they may be put into good rich soil and abundance of blooms secured even the first season. Roses are grown so readily in California that there is no excuse for not having millions of them.

WISTARIAS NOT FLOWERING.

More than one correspondent has written me this spring of the failure of their wistarias to flower, one of whom says her vine has been planted five years and has borne no flowers yet, and says she is prepared to root it out. To do this would be a mistake, for it is well known to gardeners that this vine takes a long time to reach a flowering age. In my own case I have now, close to my door, and in view as I write, one of the Chinese wistarias which has been planted six years, and which was two years old when set, and it has never bloomed yet. One of those who wrote me said she had been told that neither the wistaria nor the trumpet vine would flower when raised from seeds, and desired to know if this was so, as if true it might be the reason her wistaria had not shown flowers. Replying to the seedling matter first, there is no truth in the saying that seedlings will not flower at all. It is likely that they do not bloom so soon as those raised from cuttings or in other ways than from seeds, for all experience proves that seedlings take longer time, the reason being that they have more vigor, and the more vigorous the growth of a plant the more prolonged is the period before flowering.

Wistarias have always been known as demanding several years of strong, vigorous growth before they bloom. I rather looked for my own plant to flower this spring, but it did not, though it has reached the top of a dead tree, but the shoots are all long, thin ones, and not the short, woody ones that flower. Many are disappointed in having to wait so long for this vine to flower, but they are rewarded in the end, for when it commences it never fails to flower every year; and almost everyone knows of the beauty and fragrance of its racemes of purplish blue flowers, referring to the Chinese species, Wistaria sinensis, which is the one most everyone means when speaking of wistaria.

By wistaria everyone, almost, means the Chinese, but there are other kinds, one a Japanese species; another a native of our own country, and hybrid kinds besides, but none equal the Chinese in beauty. It is worth waiting for some years to get at last such a lovely vine in flower.—Jos. Meechan in Practical Farmer.

SOMETHING OF BEAUTY.

As well as of order, convenience and good sanitary conditions—is needed to make a farm home attractive. In planning such a home, let not this be forgotten. A wide sweep of lawn between the house and the road; a background of trees and shrubbery; low flowering bushes planted close to the foundation and serving, as it were, to bind the house to the soil; vines over the porch or bordering the window-frames—all these do much to beautify the house. From the erection of the first house, however modest, the home-maker should plan for the future as well as for today. He should avoid building too near the road; remembering that prosperity may ere long enable him to build a larger home, which may often be most satisfactorily placed in front of the old one. Barns and other buildings should be located in such relation to one another as to allow for improvements which will result in a harmonious whole.—Minnesota University Farm News.

THE RETORT COURTEOUS.

An old darky wanted to join a fashionable city church, and the minister, knowing it was hardly the thing to do and not wanting to hurt his feelings, told him to go home and pray over it. In a few days the old darky came back. "Well, what do you think of it by this time?" asked the preacher. "Well, sah," replied the colored man. "Ah prayed an' prayed an' de good Lawd, he says to me, 'Rastus, Ah wouldn't bodder mah haid about dat no mo. Ah've ben trying to git into dat chu'ch mahse'f for de las' 20 years and Ah ain't done had no luck."
—Christian Register.

Garden and Field Crops

THIS MONTH.

Hardy vegetables, such as beets, carrots, cabbage, cauliflower, lettuce, parsnips, parsley, salsify, turnips, radishes, peas, roots of asparagus, rhubarb and strawberries, may be planted. For some frostless sections hotbed plantings of tomatoes, peppers and eggplant seed may be made. Portions of the garden which will not be planted for a few weeks or months may be heavily fertilized with stable manure, which should be spaded or plowed under. It is almost impossible to get the vegetable garden too rich, and the abundance of humus carried in stable manure makes it one of the most valuable of fertilizers.

THE HOTBED.

To prepare a hotbed, make a frame or box the size desired for it. The size varies, but the usual size is from 4½ feet to 6 feet wide and as long as desired. It is not a good idea to make the hotbed too wide because it prevents the grower from easily reaching the center of the bed when weeding it. The frame can be made out of common one by six inch lumber, but heavier material may be used if desired. After sawing off the pieces for the four sides nail them together at the corners. Place this box over the place marked for the hotbed. At each corner and in the center of each piece, on the outside of the frame sink or drive into the ground a two by four stake thirty inches long. Nail the hotbed box to these stakes. The box so secured to the stakes will not spread or slip up or down.

When the frame has been prepared as above dig out the soil inside of it to a depth of twenty-four inches. While digging out this pit it is a good plan to make it a little larger at the bottom than the frame above, so the heating material when placed in the pit will be under the whole surface of the area inside the frame.

Into this pit place the heating material from sixteen to twenty inches deep. Care should be taken to tramp the manure down firmly and evenly so as to make the mass compact and smooth on top. On top of this put five or six inches of rich well crumbled loamy soil. After the temperature of the soil has become somewhat uniform the seed may be planted. After planting the seed, care should be taken to see that the soil does not become dry, because if it does the young plants will likely be killed. The heating of the manure below causes the water to evaporate rapidly from the soil. This being the case it is important to apply more water than ordinarily required in an outside bed. Probably more failures are caused in growing plants in the hotbed by injudicious and improper watering than from any other cause.

In regard to the kind of material to use for heating, fresh horse manure is probably the best. In preparing the manure for the hotbed, secure the amount needed for it and place the same in a pile. When piling it up put on enough water to thoroughly moisten the whole mass. If fermentation does not commence soon it can be hastened by throwing on the pile a few pailfuls of hot water. When the manure has begun to heat well turn over the whole mass into a new pile. This will make the heating of the whole more uniform. If necessary add more water. The fermenting manure should not be allowed to become dry nor should it be made too wet. After the heating has become somewhat uniform the manure can be put into the hotbed pit as described above. If the manure used is very fine and does not contain much straw or other litter, it is better to add some straw or other coarse material. This helps to make the heating more uniform and prevents too rapid fermentation of the manure thus causing the heat to last longer.

The kind of covering to use for the hotbed depends on the material at hand. The regular cold frame sash may be used. The size most common in use is the three by six foot sash. The cold frame in connection with the manure furnishes abundant heat. Where the cold frame sash is not available, covering the bed with common muslin or white domestic gives very satisfactory results. It lets in sufficient light and holds the heat to some extent from passing off too rapidly. The muslin may be stretched over the whole hotbed in one piece, or small frames may be made the width of the cloth and size of the frame to which the cloth may be tacked. These frames can be made out of light lumber. Strips two inches wide by one inch thick will be sufficiently heavy. The frames may be mortised at the corners and nailed together, or small strap angle irons like those used on the bodies of carriages can be screwed on each corner which will hold the frames firmly. On very warm days the frames may be raised to let out some of the excessive heat and more light in.—New Mexico Agricultural College.

VEGETABLES ON AN ACRE OF LAND.

With land in the proper condition, an authority says a good farmer can raise on one acre any one of the following:

One acre of onions, 445 to 600 bushels.

Tomatoes, 300 to 400 bushels.

Sweet potatoes, 500 to 600 bushels.

Beets, 300 to 400 bushels.

Carrots, 300 to 400 bushels.

Cabbage, 8000 heads.

Potatoes, 100 to 300 bushels.

Here are actual results, each item referring to the product of an acre where the grower was a specialist:

Asparagus, 300 bunches, 20 cents a bunch, $600.

Cauliflower, 100 to 300 pounds, $450.

Onions, 600 bushels, 75 cents, $450.

Cabbage seed, 1000 pounds, 40 cents a pound, $400.

Potatoes, 175 bushels, low estimate, $175.

Cabbage, 7000 heads, $500.

To be a successful trucker, have a continuous succession of crops, and maintain and increase the land's productivity year after year.

Potatoes, unlike onions, should not be allowed to sun after they are dug. Pick them up and place in bags as soon as they are out of the ground to prevent the sun from striking them to injure the skin and to cause them to shrink.

Onions

from Morse's Seed

Success in onion planting depends on your having ***good seed.*** Morse Onion Seed can always be depended on; we are proud of them; they are grown, gathered and selected under our personal supervision. We ***know*** they're right and will produce the crops, because we grow and sell more onion seed than any other concern in the world.

We recommend the following varieties for fall planting. They can be transplanted in February and will be ready for market in early May.

Australian Brown; early and very hardy; the best long keeping onion ....per pound, **$1.00**
California Early Red; a mild flavored onion, very popular as green onion ....per pound, **$1.00**
Prize Taker; a large globe shaped onion; a very heavy cropper ....per pound, **$1.50**
Yellow Globe; the popular yellow globe onion; heavy cropper and good, firm, hard fleshed, per pound, **$1.25**

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Choice trees, 3 to 14 feet, from 20c each and up; special low prices on lots of 200 and over. If contemplating planting a walnut grove, it will be to your interest to correspond with us at once, as the stock is limited and the price sufficiently attractive to clean it out quick.

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Grower of Strawberry Plants only, and only the best.

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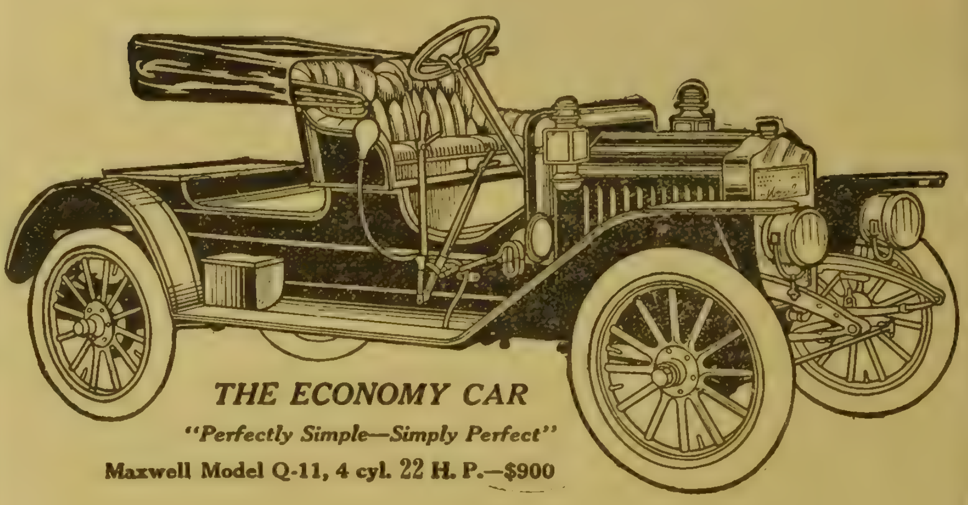
Straw	.30
Shoeing	.498
Grease	.0012
Depreciation	3.349
	$9.8482
Cost two passengers per mile	.05
Cost one passenger per mile	.025

Daily average distance 32 9-10 miles

To operate the Horse and Buggy the cost is based on hay at 1c. a pound, oats averaging 25c. a 4-quart feeding, purchased en route; straw at $1.50 cwt., 100 lbs. per mo.; shoeing, $2.50 a month; grease, 12c. a pound; depreciation, horse, buggy and harness, costing $375.00, .017 a mile, average 33 miles a day. Stabling not included.



THE ECONOMY CAR

"Perfectly Simple—Simply Perfect"

Maxwell Model Q-11, 4 cyl. 22 H. P.—$900

Automobile

EXPENSES STOP
When not in use

Model Q-11 Maxwell

Distance Traveled, 457 miles

COST

Gasoline	5.60
Oil	[illegible]
Grease	.13
Depreciation, Car	3.66
Depreciation, Tires	6.85
	$16.84
Cost two passengers per mile	.037
Cost one passenger per mile	.018

Daily average distance, 76 3-10 miles

To operate the Automobile the cost is based on gasoline purchased at 16, 18 and 20c. per gallon, and oil at 65c. a gallon, purchased en route; grease at 12c. a pound; car depreciation, .008 per mile; tire depreciation, .015 per mile. Garage not included.

I've Proved Just What You Want to Know

What Prompted the Test Millions of people buy buggies yearly, believing them to be the most economical form of transportation. Thousands of farmers, merchants and professional men wrote me during the past year, saying "they would gladly purchase an automobile if they only knew it would serve their needs as economically as their horse and buggy."

I knew the Maxwell Model Q-11 Runabout, in its present state of perfection, could do three times as much work at half the cost and one-fourth the trouble, and decided to make a public test to prove it.

I Invited the Contest Board of the American Automobile Association to conduct this test, in order that it might be in disinterested control. The Board appointed judges to attest its results. The two vehicles ran each day over a predetermined route about the streets of New York City and suburbs. Each ran continuously for six hours, regarded as a normal day's work. Account was kept of every item of expense entailed. The needs of each vehicle were supplied at roadside stores at current market prices.

Each Day a Different Route was laid out, in order to cover all conditions of city and suburban traffic and all sorts of roads. One day they covered the densely congested districts of the city; another day they ran in infrequently traveled suburban roads. Everything was done to make the test normal, actual, eminently fair and conclusive, and the results confirm our claim that **Maxwell automobiles are cheaper to use than a horse and buggy.**

SALE OF MAXWELLS TO DATE

Sold to Sept. 30, 1910	37,389
Sold during Oct., 1910	1,767
Maxwells in use today	39,156

WATCH THE FIGURES GROW

What It Means to You The Maxwell automobile means new life on the farm, happier and healthier conditions, better schooling for the children, by enabling them to attend town schools. Easy shopping for the wife. Quicker errands about the farm and increased knowledge of business conditions in your section of the country. It will, if properly employed, increase your earning power, save your time, extend your field of action and keep the boys on the farm by its money-making possibilities. It is always ready, sanitary, and cannot be overworked.

It Proved Beyond Dispute That the Maxwell Runabout is undoubtedly economical; that its pleasures are within the reach of men of moderate means; that it can travel three times as far, in the same time, as the horse and buggy, and, unlike the latter, can repeat the performance if found necessary; that its cost is about one-half; that it needs little or no care, as against constant care, and that while not in use expenses stop, while with the horse and buggy expenses never stop; that the Maxwell car is an efficient, economical, reliable, utility automobile, as near perfection as modern workmanship can make it.

These Books Free I want you to know more about this test. Let me send you all the evidence, also our latest catalogue and Farmers' Economy Booklet. I will gladly send you these books free, and the sending places you under no obligation. A postal will do. Just say, *"Mail Books."*

J. D. Maxwell *Pres. and Gen'l Mgr.*

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(LICENSED UNDER SELDON PATENT.)
PERY STREET TARRYTOWN, NEW YORK

Live Stock and Dairy

Dairymen and stockmen are requestd to write of their experience. Mrs. herman is always willing to answer ueries and this, with experience of ther workers, will make this departnent of greater value.

NEIGHBORS.

By Mrs. M. E. Sherman.

Election times brought the neighbors close together for the big autos of the candidates were giving everyone free lifts along the way to the next farms. I have seen more of the men on the nearby farms in this past month than since last election time. The past couple of weeks have been filled with Institute work and these visits to neighboring towns have shown us how great was the interest in alfalfa, in cows, and in the homely pigs. The farmer is growing tired of raisins and dried fruit—as the crop is handled year after year to his loss.

Vineyards.

If it were not for the unfatigued ew comer, filled with the real estate nen's stories, I do not believe the market would find an increasing supply of peaches, raisin or wine grapes. The seeding combination, the wine association—and the canning companies have about killed all desire on the part of any one to plant orchards and vineyards. It seems a pity that a trial of parcels post cannot at this time be made for the benefit of the raisin and dried fruit growers. If these articles could be sent directly from the farm to the consumers at a low rate of postage it would make them cheaper to the consumer. The use of raisins for stock feed is growing constantly and this will take them up largely when not of the highest quality. The profit on feeding raisins to hogs is about this at present time: three pounds of raisins will make a pound of fat hog. If this is worth ten cents a pound, then the raisins are worth three and a quarter cents a pound for hogs. If two pounds of raisins are fed with one pound of rolled barley and five pounds of chopped alfalfa hay the hogs will put on about two to two and a half pounds of meat.

Jersey-Durocs.

In the way of pigs, the best I have seen lately are three Jersey-Durocs brought from Illinois. The sows were as fine as anything I have seen in a long time. I often wonder why it is that we see in the sows that come here from the East much higher quality than in the male pigs, I rarely see in the males the perfection that the type calls for in a breeding animal. This breeder had an interesting lot of young white sows entirely free from any traces of skin troubles. They were the offspring of a white sow of unknown breeding that had always had a clean healthy skin. It may be that as the country advances and the pigs are kept as domestic nimals, and not turned out to rustle, that many of the troubles of the white hogs will pass away. At another institute a man reported investing in registered white swine believing he could do well with them out here. I am always glad to see these newer breeds being tried out. There are also several breeders about to start in with the mule-footed hog.

Profits.

Everywhere the people are saying pigs are more profitable than grapes when a man has a good alfalfa field to feed them on. The tendency is to carry the pigs up to full weight by feeding rolled barley and Egyptian corn as a supplement to dried fruit and grapes. Profits are different often on the adjoining farms. Down in the next county I was interested in one man's story of having a forty acre piece of alfalfa stocked with four hundred head of hogs and finding it ample feed for them, when a little sown barley was grazed off during January and February.

Lice.

Everywhere I noticed the work of lice; even at a county fair I noticed that some pigs were lousy. This is unnecessary and rather useless to feed lice on good rations of hog meat. The lice may be held readily under control during the summer time by putting into the wallows of the pigs a couple of gallons of crude oil. This should be renewed every two or three weeks to keep up the supply. The wallow is necessary if the hogs are to escape the effect of heat during the summer time. A dipping vat on a ranch is, of course, excellent to have but it is rather expensive as it should be arranged with some means for heating the water. Where the Texas fever tick is found it is the only possible way of handling cattle, but the pig can be trusted to wallow whenever he is given the opportunity.

Dips.

The commercial dips are many of them good and if the animals are completely soaked they will destroy the lice. Two or three applications are necessary to completely destroy the lice as they hatch for the eggs are well protected. This is the reason why it is so much more likely to be effective if the crude oil is used in the wallow than to attempt to spray, for the pig has abundant time to take care of the lice. The colts and calves are readily treated with kerosene emulsion applied with a mop or spray pump quite warm. For summer use it may not be necessary to heat the emulsion, still we have better results if it goes on at blood heat. This is easily explained in the fact that it penetrates the hair better when it is warmed and the animals stand more quietly.

Kerosene Emulsion.

The pig scalding vat is used to make the emulsion in quantity as it is useful to have on hand. The chicken house may need a spraying with it at any time. Take ten pounds of hard yellow laundry soap, chop it up and put it into the kettle. If the water, about twenty gallons, is boiling in the kettle and the soap dropped into it a little at a time, in ten minutes it will all be well dissolved. Have two ordinary sized barrels and put into each of them twenty gallons of a cheap grade of kerosene oil. Pour one-half of soap mixture into one barrel and mix it by beating it well until it is a complete emulsion. Then pour the rest into the other barrel and repeat this. This is the stock solution and when it is used put one gallon to seven of hot water and apply to the animals with either

---

Anthrax Cure, Milk Fever Outfits. See O. J. Weber Co., 225-227-229-231 East Sixth street, Los Angeles.

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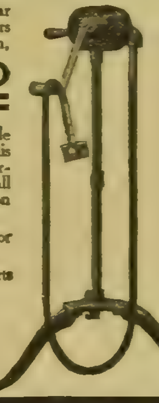

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It turns easier, clips faster and lasts longer. If you have but one or two horses it will pay you to have this splendid machine.

The gears are all cut right out of the solid bar, and all wearing parts are file-hard. It will last a lifetime.

If your dealer hasn't it, write us direct. GET ONE NOW

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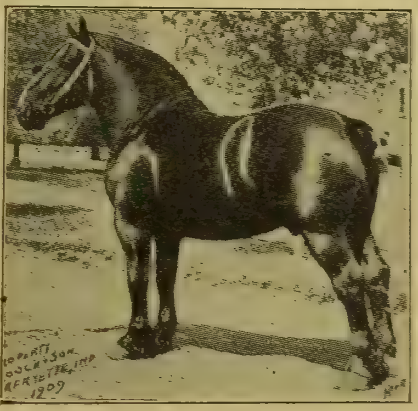

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J. Crouch & Son, Proprietors
New Importation of
Percherons, Belgians, Shires, German Coach and Hackney Stallions and Mares
just arrived. At the recent California State Fair we won sixteen prizes on eighteen horses shown.

If you want one of the best, come and have the first choice. Our guarantees are the best. Terms liberal. Pacific coast stables located at the California State Fair grounds.

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J. F. CAMPBELL, Manager

Scotch Collies for Sale at Half Value

1 Dog (registered) brought from East, $25.00.

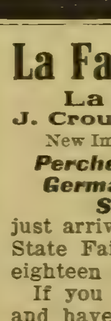
1 Bitch, out two years, same age, $15.00.

2 5-month puppies, male and female, $10.00 to $15.00.

1 male pup, 2 months old, $10.00.

They are all extra fine, with exceptional pedigrees. Will sell at these prices if taken at once.

RUSSELL S. COX,
San Marcos P. O., San Diego Co., Cal.



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A BOG SPAVIN, PUFF or THOROUGHPIN, but
ABSORBINE
will clean them off permanently, and you work the horse same time. Does not blister or remove the hair. Will tell you more if you write. $2.00 per bottle at d'lers or deliv'd. Book 4D free.
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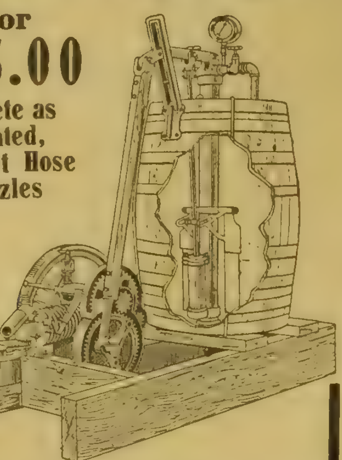
Power Sprayer
For
$85.00
Complete as Illustrated, Without Hose or Nozzles



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Large air chamber.
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Uses only one pint of gasoline every three hours.
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212 N. Los Angeles St. - Los Angeles
Write for Catalogue No. 25 C C

The Whiting Jersey Stock Farm Co.
Is making the very best strains of blood fresh from the island of Jersey a specialty. Whiting Jersey Stock Farm Co., Heber, Cal.

a mop or brush, or spray it on. This emulsion is harmless to the stock and should be kept in quantity on every farm. The dogs are greatly relieved from fleas if they are dipped into this solution once a week during the summer. A couple of dogs running around will pick up lice and ticks as well as fleas and by destroying them weekly it helps to clean up the pests. The kerosene emulsion and Bordeaux mixture are two of the greatest friends of the farm; one to control the mildews and smuts of vines and cereals and the other to control the lice, mites and small insect foes of the farm animals.—M. E. Sherman.

A NEW GERMICIDE.

Great hopes are felt for the possibility of stamping out hog cholera, gid in sheep, hoof and lip diseases with which stock raisers have to contend.

Tests which have been made with the wonderful new University of Minnesota chemical discovery known as Benetol, show that there is every reason to believe that this chemical will be the one thing that has been needed to make stock raising more certain, and at least free from scourges which carry off whole colonies of stock in a short time.

Prof. H. C. Carel, of the University of Minnesota, as has already been made public quite generally through the press, has discovered one of the most powerful of germicides, and the first of all, to be non-poisonous, chemically. The poisonous quality of Benetol has been found to be about that of common table salt. It can therefore be given in large doses internally to human beings, and hence, it follows, in large quantities to animals in the same way. Tests on horses show that ounce doses in capsule are easily assimilated, with germ killing results.

In order to have a perfect test made, that can be bulletined to the stock raisers of the country, several experimental stations have been sent quantities of Benetol, with which to make the test. The Minnesota station will probably complete its tests first. They will consist in giving infected hogs internal doses, and sprays. In the dread sheep disease, in which the worms enter the brain, the plan is to inject different quantities of Benetol under the skull where it will be absorbed by the brain. Chemists assert that if the chemical can be sent to the seat of the trouble, it will kill the germs in a very short time, soon enough to save the animal.

Prof. Carel states that he will send a desired quantity to any station that has not already secured it, for the purpose of making any tests they may desire. He says it will be beneficial for spraying fruits because of its great germ killing powers, and the fact that it is not a poison, which will allow its use at any stage of the development of the fruit. He says it will surely kill all fungus germs.

The department of the interior is testing Benetol on several Indian reservations, and several have pronounced it a success, and is doing the same thing at army posts. The navy has already pronounced it a success, and is using it at the Marine Hospital at New York. The Baltimore water board is testing Benetol with a view to using it to purify the water supply of Baltimore.

FEDERAL STANDARDS.

Milk is the fresh, clean lacteal secretion obtained by the complete milking of one or more healthy cows, properly fed and kept, excluding that obtained within fifteen days before and ten days after calving, and contains not less than eight and one-half (8.5) per cent. of solids not fat, and not less than three and one-quarter (3.25) per cent. of milk fat.

Blended milk is milk modified in its composition so as to have a definite and stated percentage of one or more of its constituents.

Skimmilk is milk from which a part or all of the cream has been removed, and contains not less than nine and one-quarter (9.25) per cent. of milk solids.

Pasteurized milk is milk that has been heated below boiling sufficiently to kill most of the active organisms present and immediately cooled to 50 degrees Fahrenheit or lower.

Sterilized milk is milk that has been heated at the temperature of boiling water or higher for a length of time sufficient to kill all organisms present.

Condensed milk, evaporated milk, is milk from which a considerable portion of water has been evaporated and contains not less than twenty-eight (28) per cent. of milk solids of which not less than twenty-seven and five-tenths (27.5) per cent, is milk fat.

Sweetened condensed milk is milk from which. a considerable portion of water has been evaporated and to which sugar (sucrose) has been added, and contains not less than twenty-eight (28) per cent. of milk solids, of which not less than twenty-seven and five-tenths (27.5) per cent. is milk fat.

Condensed skimmilk is skimmilk from which a considerable portion of water has been evaporated.

Buttermilk is the product that remains when butter is removed from milk or cream in the process of churning.

Goat's milk, ewe's milk, et cetera, are the fresh, clean lacteal secretions, free from colostrum, obtained by the complete milking of healthy animals, other than cows, properly fed and kept, and conform in name to the species of animals from which they are obtained.

Cream.

Cream is that portion of milk, rich in milk fat, which rises to the surface of milk on standing, or is separated from it by centrifugal force, is fresh and clean and contains not less than eighteen per cent of milk fat.

Evaporated cream, clotted cream, is cream from which a considerable portion of water .has been evaporated.

Milk Fat or Butterfat.

Milk fat, butterfat, is the fat of milk and has a Reichert Meissel number not less than 24 and a specific gravity not less than 0.905.

Butter.

Butter is the clean, non-rancid product made by gathering in any manner the fat or fresh or ripened milk or cream into a mass, which also contains a small portion of the other milk constituents, with or without salt, and contains not less than eighty-two and five tenths (82.5) per cent. of milk fat. By acts of Congress, approved August 2,

Cream Separators, all sizes and prices. O. J. Weber Co., 225-227-229-231 East Sixth street, Los Angeles.

20th Century Grader
The Light Weight Wonder

600 Pounds
—masters the most difficult pieces of land—cuts the brush—stirs the soil so it won't need ploughing—levels the land—throws up dikes—digs ditches and maintains your roads.
This grader is invaluable on fruit farms. One man—one team—operates it. The 20th Century is
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It does the work of several special machines and adds to your profits.
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The best that 40 years experience can produce, being grown slowly, in the cool atmosphere of the coast, are more hardy and more vigorous than those grown in the hot interior of the State.
Correspondence Invited.
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St. Lambert and Flying Fox Blood. Margery Golden's Fox heads the Herd. Young stock for sale. GUY H. MILLER, Prop., R. 3, Modesto, Cal.
When writing advertisers, mention Cultivator.

1886, and May 9, 1902, butter may also contain added coloring matter.

Renovated butter, process butter, is the product made by melting butter and reworking, without the addition or use of chemicals or any substances except milk, cream or salt, and contains not more than sixteen (16) per cent of water and at least eighty-two and five-tenths (82.5) per cent of milk fat.

Cheese.

Cheese is the sound, solid and ripened product made from milk or cream by coagulating the casein thereof with rennet or lactic acid, with or without the addition of ripening ferments and seasoning, and contains, in the water-free substance, not less than fifty (50) per cent of milk fat. By act of Congress, approved June 6, 1906, cheese may also contain added coloring matter.

Skimmilk cheese is the sound, solid and ripened product, made from skimmilk by coagulating the casein thereof with rennet or lactic acid, with or without the adition of ripening ferments and seasoning.

Goat's milk cheese, ewe's milk cheese, et cetera, are the sound, ripened products made from the milks of animals specified, by coagulating the casein thereof with rennet or lactic acid, with or without the addition of ripening ferments and seasoning.

Ice Creams.

Ice cream is a frozen product made from cream and sugar, with or without a natural flavoring, and contains not less than 14 per cent of milk fats.

Fruit ice cream is a frozen product made from cream, sugar and sound, clean, mature fruits, and contains not less than 12 per cent. of milk fat.

Nut ice cream is a frozen product made from cream, sugar and sound, non-rancid nuts, and contains not less than 12 per cent of milk fat.

Miscellaneous Milk Products.

Whey is the product remaining after the removal of fat and casein from milk in the process of cheese-making.

Kumiss is the product made by the alcoholic fermentation of mare's or cow's milk.—Hoard's Dairyman.

WHERE THE HOG EXCELS OTHER ANIMALS.

Now let us figure a little. One good sow will raise two broods of eight each, or 16 pigs each year. Ten sows should raise 160 pigs. Counting 125 for sale, balance for loss and family use, one pound per day as gain for 200 days, you will then have 125 hogs averaging 200 pounds, 25,000 pounds gross, at eight cents per pound which would bring $2,000. The market will go lower on hogs, but you can surely buy good land at $20 per acre, or $800, so you will have left $1200 as expense item, feed, interest on money, cost of crops.

One word as to shelter.

In the northern states we keep stoves in the breeding houses. In southern Illinois a December pig is considered worthless. Many die in February and March. April and September are the best months for sows to farrow. You of this land of golden opportunities can have the sows to farrow any month in the year. I would not advise the hottest.

The hog is the cleanest animal on the farm; will make his own bed, take a bath several times a day, more than most of us do; does not need grooming; does not lie down in filth unless compelled to. Now listen, if you will not provide cool shade and plenty of water, your name will not be Mr. Farmer; it will be Mr. Dennis.—Farm and Ranch.

HOW TO DOCK SHEEP.

Methods employed in cutting the tails from sheep in the division of animal husbandry at university farm, St. Paul, are first to place the lamb on its back, pushing the skin of the tail back toward the body as far as possible, so that enough skin will remain to cover the stump of the bone when the tail is cut off. In operating on lambs several months old, draw the skin back closely to the body and tie a ligature around the stub of the tail until an hour or two afterward, to prevent excessive bleeding. Place the lambs in a clean pen bedded with clean straw. Cleanliness prevents infection, and in such an inclosure bleeding can be detected. Rams should be castrated at time of docking, while in the hands of the operator, if proper physical development of the organ has been reached. This condition occurs about ten days after birth.

PERCHERON SOCIETY OF AMERICA.

The Percheron Society of America, of which Wayne Dinsmore is president, with office at the Union Stock Yards, Chicago, is making an effort to clean up and complete its record prior to January 1st. The following circular explains itself:

The opportunity to re-record purebred Percherons, not already properly recorded in the Percheron Stud Book of America will soon be past. January 1st, 1911, is the time limit set by the board. Before this date, American bred mares, now recorded in other associations recognized by the Government, may be re-recorded for $2 per head, if eligible; imported mares at $5 per head. After January 1st, the charges are $100 per head for re-recording imported animals and will be strongly advanced on American breeds. This liberal offer is made to permit breeders to straighten out their stock, and every breeder should act at once, if he has any animals affected.

The Percheron Society of America is the only organization possessing the original records. It represents fully 95 per cent of all Percheron breeders in America. Every one of the 3,000 shares of capital stock has been taken, and numerous applications for stock are now on file, awaiting an increase in capital stock. Almost 3,000 Percheron breeders are members of the Percheron Society, nearly all the stock being held in single shares by individual breeders.

Seven hundred and ninety-four new members have been added to the Percheron Society of America between December 1st, 1909, and November 1st, 1910; 360 of these have been added between August 1st and November 1st.

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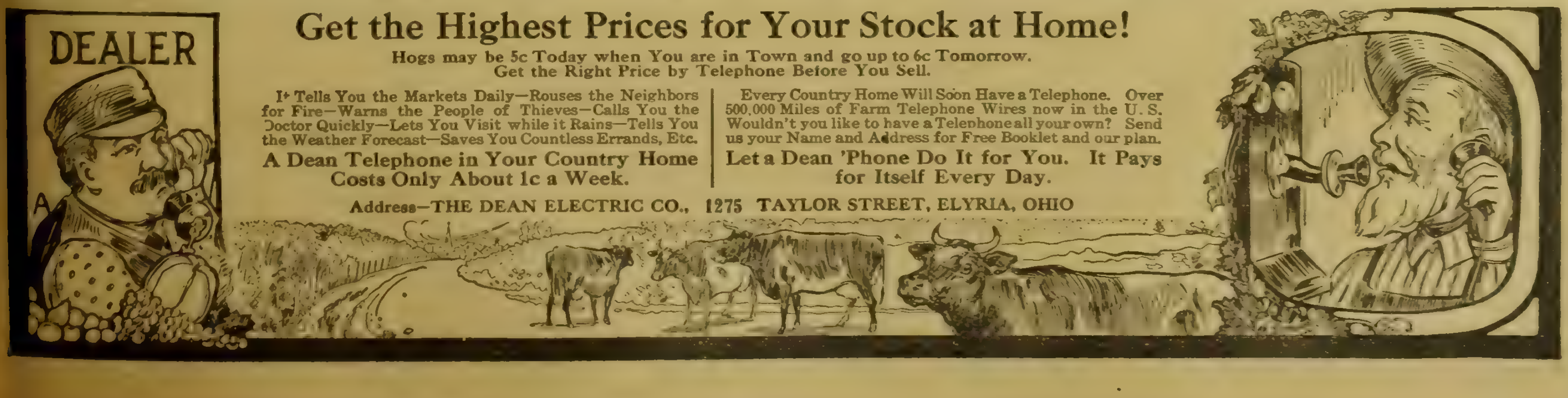

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California Cultivator

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The Big Tulare Citrus Fair

The readers of the Cultivator will be glad to learn that the outlook for a big citrus fair at Visalia from December 5 to 10 is unusually promising, and will undoubtedly be the star attraction in Central California for 1910. The Tulare Annual Citrus Fair has become a fixed annual feature for that region, growing in importance and popularity with the succeeding years. This year the people of the San Joaquin valley are a unit in their endeavors to give it state-wide significance. To attain this realization the commercial interests of Visalia, coupled with a liberal county support, are showing an initiative and developing energy that is as gratifying as it is glorious. It makes me think of the palmy days of citrus fairs in Los Angeles.

The coming array of citrus fruits is to be housed in a handsome new pavilion 100x300 feet, every foot of floor space of which has been taken, the major portion by locality exhibits from Dinuba, Orosi, Three Rivers, Lemon Cove, Exeter, Lindsay, Strathmore, Porterville, Tulare and Visalia, besides the numerous individual exhibits. As auxiliary attractions the Golden Gate Park band of San Francisco will give concerts during the entire week; the La Fiesta Carnival Company will add to the interest in the function; the decorations and lighting of both the city of Visalia and the pavilion proper are to be carried out on an elaborate scale; all railroads will run special trains from all valley points, and reduced rates are assured from as far north as Sacramento and as far south as San Diego; special excursions will also run from San Francisco and Los Angeles.

Enterprise like this is deserving of recognition, and we hope to meet many of The Cultivator's thousands of readers from all over the State at Visalia December 5-10.

Economic horticulture will be on dress parade, and all who can should see the show. Tulare county has the goods, as shown by the following soil figures: Twenty thousand acres in citrus fruits, 7,000 acres in bearing, over one million boxes of oranges shipped last season, over $1,000,000 received for dried fruit products annually, over $500,000 received for green fruit shipments, pay roll from creameries, for butter fat alone, over $100,000 per month; two of the largest fruit canneries in the state at Visalia; population has more than doubled since 1900.

Laborer Worthy of His Hire

As may be noted in the report of the committee on standardization at the recent meeting at Newcastle, many growers refused to pay the one-fourth of one cent per box for the expense fund of the committee put in charge of standardization. The loss was later made up by certain shippers agreeing to make it good. Therefore the committee secured its funds for the season's work, but did not have the good-will of the growers behind them as they should have had. It is indeed most discouraging for committeemen to give of their time and even dig from their own pockets good money to help along the cause for the benefit of all the growers. The quarter cent per box is so infinitely small that the grower who refuses it to such a committee which is looking after his interests has no conception of the needs of his own industry.

We trust another season will see the committee feeling that behind it is the fullest and most complete support of every grower of green deciduous fruit. The great measure of success secured by citrus growers of the southern part of the state is due to this one factor of standing togther almost as one man behind the committees appointed to look after the interests of the entire industry. If the laborer isn't worthy of his hire he should at least be worthy his expenses.

Surfeit of Good Things

Next week, which begins on Monday morning, the 5th, is filled with events of interest to agriculturists. The Petaluma Poultry Show at Petaluma, the State Fruit Growers Convention at Stockton, the Tulare County Citrus Fair at Visalia, the fall meeting of the Claremont Pomological Club at Claremont, together with the Imperial County Agricultural Fair at El Centro, makes it a full week from one end of the state to the other. While these important events are widely separated, yet they are of such interest that many would like to attend more than one, which makes a somewhat unfortunate situation.

Fruit Growers Convention

The thirty-fifth convention of the State Fruit Growers will be held at Stockton next week, beginning on Tuesday morning. A full program has been provided; we doubt not, as is usually the case, too full a program. The principal theme will be standardization and general discussion of marketing of green deciduous fruits. Commissioner Jeffrey makes a hobby of the marketing question, and while he believes that cultural conditions should be brought to the attention of the growers that they may produce a finer grade of fruit, yet he feels that the growers are more advanced along that line than in the one of marketing and securing best returns for the fruit they have produced. Sessions will last day and evening from Tuesday morning until Friday afternoon.

Farmers Institutes

The dates for farmers institutes for the Imperial Valley announced by Mr. Neff a few weeks ago have all been called off because of the Imperial County Fair occurring the same week.

Powell in California

California's enterprisinng fruit growers have won one of the most valuable men in the United States. They went to the Department of Agriculture and chose one of its brightest men and made him so attractive an offer that he has given up the Department work, and after the first of the year will take up the fight for California fruit interests. We refer to G. Harold Powell, for years in charge of field investigations for the Bureau of Plant Industry of the Department of Agriculture and more recently head of the Bureau. From this responsible position, Mr. Powell has been induced to come to take charge of the California Citrus Growers League, of which he will be secretary and general manager. This league was organized to look after the larger interests of the citrus growers, and is composed of not only the largest shipper in California, the Fruit Growers' Exchange, but of practically all other shippers. The largest questions which come before this league are those concerned with the tariff and transportation. Mr. Powell's experience in California, where his services resulted in the saving of millions of dollars to the citrus and grape growers, has given confidence in him which will wonderfully aid him in his new work. The whole state will extend to him a cordial welcome.

Orchard Help

The Santa Clara county branch of the Farmers Educational and Co-operative Union appointed sometime ago a committee on white labor for California fruit growers. This committee is inaugurating a movement to secure from boards of education aid in the labor question in arranging school sessions so as best to aid in the labor problem of each district. For instance, in Gilroy this present season prune growers were handling the labor situation very satisfactorily until the opening of the schools which occurred in the middle of the prune gathering season, and instantly the growers were confronted with a situation which spelled great loss. The committee informs us that some educators in the state are joining with the Union in this movement, and the Union itself is putting forth every effort through its own organization.

We believe this movement would not affect the value of school work. While it might not be in theory as satisfactory to the state or county superintendents of schools, the benefit locally would be enough greater to justify any slight inconvenience. This plan, of course could not be followed in the citrus sections where the season lasts nearly the whole year, or at flood tide at least half the year, but in that industry the labor question is more easily handled. With small fruits and deciduous fruits, however, the springtime and summer are the seasons requiring greatest labor. Here children from ten years up may be of great aid.

The solution of the problem of "California for white folks" is worthy best thought of her best people.

Experiment Stations

As an example of the extended work being carried on by the Department of Agriculture we may refer to the fact that not only are Experiment Stations established in all the states, but in Alaska, the Hawaiian Islands, Guam, Porto Rico and the Philippines. These outlying stations are naturally engaged in solving the fundamental problems of agriculture. Especially is this true in Alaska and Guam Island, where practically nothing is known of the possibilities. In Porto Rico experts are studying into pineapple and sugar problems. The pineapple and coffee plantations especially are being investigated for "sick" soils. The addition of fertilizers and of humus does not seem to aid in producing crops successfully. A trouble which is called mosaic disease, in which there is a lack of chlorophyll is being investigated. It is thought to be caused by excess of bacterial life and treatment with carbon bisulphide has been found successful but at a prohibitive cost. Some cheaper corrective will yet be found.

In Hawaii, studies of the soil were among the earliest scientific investigations taken up by the station. The total nitrogen content of some of the soils was found to be higher than the crop production would indicate and investigations showed much of the nitrogen to be present in organic forms that are not available for plant growth, if not actually detrimental.

Agricultural News Notes of the Pacific Coast

Northern California

Geyserville, Sonoma county, is still shipping prunes.

Petaluma's prices on Thanksgiving turkeys were 27 cents per pound, live weight.

Articles of incorporation for the Haywards Poultry Producers Association have been filed.

New reclamation districts have been formed in Yuba and Sutter counties near Wheatland.

The Sacramento Valley has shipped this season practically 14,000 cars of deciduous fruits.

Horticultural Commissioner Galloway of Sonoma county is giving addresses on fruit tree spraying.

Eastern homeseekers have secured a big farm in Sutter county, which they will subdivide and irrigate.

There was a registration of thirty-six in the short course in agriculture at the State Farm at Davis.

Orange growers at Biggs, Butte county, shipped their first carload of fruit to Eastern markets this year.

It is rumored that a large reclamation scheme in Yolo county will be financed by Los Angeles capitalists.

Levees are being constructed to reclaim rich lowlands on the Bear River, near Wheatland, Yuba county.

A dam across the Mokelumne River has been completed. It will furnish water for 60,000 acres of land near Lodi.

Eighteen thousand acres of land near McArthur, Shasta county, is to be drained and reclaimed at a cost of $100,000.

The levees near Yuba City have been raised from five to eight feet above high water and farmers feel more secure.

Petaluma Show Association offers $2,000 worth of prizes at its fourth annual poultry show, to be held in Petaluma December 7th to 13th. H. R. Campbell is secretary.

A large cheese factory is being built at Novato, Marin county. It is to take the place of the French factory, recently destroyed by fire.

Steamers are carrying away great loads of beans from lower Sutter county. They are shipped to Sacramento, Stockton and San Francisco.

Sacramento is making preparations for a reception for the Western Fruit Jobbers' Association members, who will meet in cenvention February 15 to 18.

The early November rain was beneficial to Butte county oranges. While they are now ripening more slowly the growers think they will have finer flavor.

A farmers protective and benevolent association has arranged to conduct a model town near Livermore, Alameda county. It will be surrounded by five acre tracts farmed on the co-operative basis.

Humboldt county creameries paid the following prices for the first of the month deliveries: Capital 39c, Central 38¼c, Grizzly Bluff 39c, Swift & Co., 39c, Libby, McNeil & Libby, 39¼c.

Central California

Peach growers are busy spraying for blight.

Grangeville, Kings county, recently held a chrysanthemum fair.

That Tulare County Citrus Fair opens at Visalia next Tuesday.

A big grain ranch near Tulare is to be transformed into a dairy ranch.

Lindsay is planning for a fine exhibit of oranges at the Visalia Fair.

The wild ducks of Tulare lake are again dying off without any apparent cause.

The livestock inspector of Fresno county is busy dipping stock to eradicate the Texas fever tick.

Watsonville apple growers have so nearly finished their campaign that laborers are leaving for other fields.

Some orange packing houses closed after the holiday shipments to await more perfect ripening and holiday demand.

The San Joaquin Almond Growers' Association recently held a meeting at Lodi and discussed market conditions.

The Chamber of Commerce of San Jose is taking the initiative for a county fair to be held in the near future.

The last beets sliced at the Spreckels Sugar Factory went through the mill on November 17th. The season began August 25th.

Raisin people are again contemplating the formation of a merger which may be able to hold its own against the consolidated packers.

Ranchers at Newman, Stanislaus county, have again made contract with C. N. Hatfield to "make" rain for them for the sixth season.

Tulare County Forestry Booard has placed notices warning people against injuring or removing any trees along the highway.

The Turlock Fruit Growers' Association, organized last spring, handled forty-seven cars of fruit, nearly twice as much as anticipated.

The People's Canal and Ditch Company, supplying lands near Hanford, is completing a new weir which is declared to be very effective.

The State Convention of the Farmers Union held its annual session in San Jose last week. Over 200 delegates were in attendance.

Tulare county orange growers are concerned over the publication of false statements of damage from thrips. It is said the damage is very limited.

Porterville Chamber of Commerce will incorporate so as to better conduct its business and attract attention to the agricultural resources of that section.

The directors of the Corcoran Sugar Factory recently held a meeting and considered the proposition of transferring the sugar plant to New Jersey capitalists.

Santa Clara county farmers have experimented in peanut culture during the past year and had good results. Some acreage has produced from $150 to $200; besides the tops make excellent hay.

Southern California

Imperial Valley was given a heavy rain last week.

Ontario reports oranges coloring and promises to ship a quantity of holiday fruit.

One Imperial Valley turkey raiser marketed 2,000 turkeys for the Thanksgiving trade.

San Bernardino reports olive orchards in that section producing exceptionally heavy crops.

The Whittier Vegetable Growers Association is shipping fresh tomatoes to New York in car lots.

Without any free government grazing land Imperial county is already making a record as a wool producer.

A modern packing house has been constructed at Corona, Riverside county, and was formally opened on November 1st.

Several thousand dollars was distributed to turkey raisers of Escondido, San Diego county, just prior to Thanksgiving.

The warehouse at Lancaster, Los Angeles county, has thousands of sacks of wheat and boxes of apples stored for later shipments.

A packing company in San Diego county has made a shipment of 30 tons of raisins to New York by water and the Isthmus of Panama.

Southern California's lemon shipments are far greater than last year at this date, but oranges though a larger crop are slower in coloring.

The Consolidated Water Co. which is running a tunnel in the mountains north of Ontario recently struck a volume of water equivalent to a small river.

Development is beginning in the Chucawalla Valley in eastern Riverside county, one settler already arranging for the putting in of a half section to alfalfa.

Farmers institutes announced for the Imperial Valley have been recalled because of the fact that the County Fair at El Centro occurred the same week.

G. Harold Powell has tendered his resignation to the Department of Agriculture and will take up work in Southern California at the head of the Citrus Growers League.

The Rincon Indian reservation in San Diego county is being given preliminary surveys in preparation for an irrigation system which will cover about 400 acres of tillable land.

The Ventura County Bean Association has shipped out of Oxnard over 500 cars of Lima beans. The association paid out last year to farmers of Ventura county in excess of $600,000.

The Tri-County Freight Bureau of Riverside, San Bernardino and Imperial counties has perfected its organization for the purpose of securing terminal freight rates for Colton.

R. M. Teague, the San Dimas nurseryman, has filed on 350,000 inches of the Colorado to be taken from the river near Parker and conveyed to Chucawalla valley and Palo Verde mesa land.

The Coast

The big Roosevelt Dam in Salt River Valley, Arizona, cost over $8,000,000.

The Oregon state board of horticulture reports this year's apple crop at 1,250,000 boxes.

A temporary advance in wheat at Pendleton has succeeded in moving 100,000 bushels.

Grain growers at Walla Walla, Washington, have advertised for bids for 4,000,000 grain bags.

The extension of rubber plantations is being encouraged in the Island of Mindanao, P. I.

Forest service men have been planting larch and pine on the burned forest reserve near Wallowa, Ore.

The apple fair recently held at Albany, Ore., gave to Lane county the $100 silver cup for the finest county exhibit.

A hop grower at Eugene, Oregon, produced 103 bales of hops from eight acres, an average of 2500 pounds to the acre.

Farmers near Grangeville, Idaho, are refusing to sell because of the combination of beef buyers holding down prices.

A series of farmers institutes was begun in the Salt River Valley on Monday of this week to continue until next Wednesday.

Los Angeles county bee men are reported to have sold many stands of bees which will be transferred to "desert" sections.

Heavy rains near the close of the National Apple Show at Spokane greatly reduced gate receipts and caused financial loss.

Orchard owners at Starbuck near Dayton, Washington, are raising funds for advertising the agricultural possibilities of that section.

Tucson claims that over $250,000 will be distributed to cattlemen of that portion of Arizona as a result of this fall's cattle shipments.

Experimental plantings of lemons on Mindanao have resulted in exceptionally fine fruit that promises a future for the industry.

Wheat buyers at Walla Walla, Wash., recently advanced the price two cents, resulting in forty cars of grain being sold in a few days.

The Umatilla county division of the Farmers' Educational and Co-Operative Union was addressed at its last meeting by Government experts in dry farming.

Secretary Ballinger has advertised for bids for the excavation of seventy-three miles of sub-lateral ditches under the Tieton unit of the Yakima irrigation project. Proposals are to be opened December 3rd, at North Yakima.

An object lesson at the National Apple Show was the packed box of Pacific Coast regulation size which is slightly short the number of cubic inches in a bushel, but alongside was a bushel basket which would not contain the apples which had been placed in the box.

The worst thing we have to contend with in getting new customers to try

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By Prof. M. E. Jaffa.

The time to purchase geese is in the fall; and the time to think about it is right now. It takes some time for these fowls to become accustomed to a new place, and unless they have come to feel perfectly at home in their new surroundings by breeding time, it will be useless to expect good results. And first-class geese, of a proper age and of a desirable breed, cannot always be bought at a moment's notice. It often requires considerable time to locate the stock when it is wanted, so it behooves the farmer to begin thinking over the proposition.

The word farmer is used advisedly, for it is to him especially, and not to the Simon-pure poultryman, that this article is addressed. For the man who wishes to specialize on some one kind of poultry, the chicken, duck, pigeon, etc., would have many advantages over the goose. But for the farmer there is no fowl that will give better returns for less trouble, and will prove in the main, so satisfactory an addition to his place as will the goose.

Any income, however small, that comes in as an extra, that is derived from sources other than the usual farm crop, is always most welcome. It is like money found, instead of money which is wrested from the soil by hard labor.

The large majority of farms have some bit of land whose soil or location renders it unfit for profitable cultivation. If it has some water on it, a brook, a ditch or a spring that is not used for drinking purposes, it can be made to yield a splendid profit as a range for a flock of geese. Even a few birds will pay for the little attention they require. They will forage for themselves a good part of the year, and their demands in the way of housing and nesting accommodations are the least exacting.

Geese my be kept in the same pasture with other stock, where no separate or unused piece of ground is available. This is a truly economical arrangement for neither of the two sets of occupants is likely to interfere with the other. Geese can protect themselves from enemies and thieves, and may even prove a protection to the other stock.

The best way to begin an enterprice of this kind is with the mature birds. It is, of course, possible, when such birds cannot be found, to wait until spring and set goose eggs under hens. But such a beginning is not inspiring, and should be a case of "must," not of deliberate choice. It is weary work waiting for the baby goslings to grow into three-year-old birds, as they must before they are ready for breeding purposes. It is far more interesting and stimulating to buy the mature stock and have everything in full swing on the place by the following spring.

Any breed of geese is good for the farmer, except the Egyptian, which is purely a show bird. The gray African seems to be a great favorite especially when geese are raised on a lrge scale. The Chinese geese are small, weighing much less than the others, but they make up in flavor of meat and productiveness what they lack in size. They average 50 to 60 eggs a year. These, and the Embden and the Toulouse are probably the most profitable. The Gray Toulouse are especially liked because of their size and their longevity.

Buy a couple geese, three or four years old, and a gander, one or two years old, or better still, just a pair. When they have mated, a pair or more of any other breed may be turned into the same pasture, without danger of cross-breeding. A low shed open at one end will prove sufficient protection. There should be three little families of goslings from each goose, next spring, if judgment be used in the management. In order to accomplish this, it is necessary to take the first two batches of eggs away from the goose and give them to broody hens to hatch out. The goose may be broken of her desire to set by a few days' confinement in a dark box or coop, on a diet of water. After she is liberated she will take to laying again. She may be allowed to hatch out her third sitting herself.

These foster mothers should be arranged for ahead of time as they are most important to the plan. If there are no hens on the farm or if the breed kept is one of the non-sitting varieties it would be well to purchase some for this purpose. If this is not practicable it might be possible to arrange with some neighbor for the loan of some broody hens when they are needed. People who hatch by incubator have no use for their sitters. If all the plans fail then the goose must be allowed to do her own hatching and the farmer must content himself with one family of goslings to each mother.

In calculating on the number of hens needed it must be remembered that goose eggs are very large, and therefore a hen can not be expected to cover more than three to five eggs, according to size of the hen. A goose usually lays ten to eighteen eggs, before she begins to sit, so the number of hens required may be arrived at by a little arithmetic. Hens are apt to become impatient under the circumstances, as the period of incubation for goose eggs is nine days longer than it would be for their own. It is therefore a mark of wisdom on the part of the farmer to provide a few relief mothers for emergencies.

The advantages of keeping geese are really many. They not only serve to make otherwise useless pieces of land profitable, but yield their profit on little time, trouble or expense. They lay for many consecutive years, ten to twenty according to the breed, so that the original outlay is quite lost in the long list of returns. They require little shelter and are quite free from diseases. Even the goslings become independent and self-supporting at an early age, and may be safely emancipated from their foster mothers when they are a week old. When the pasture is good it is not necessary to give any daily care whatever to the older birds, for a box of oats or barley may be left in the field without danger of the fowls over-eating. They prefer to forage for the bulk of their food. There is, besides all these the added advantage of a second source of income, that which is derived from the sale of the feathers.

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Both one year for $1.50.

Geese should be picked twice a year, in the spring and fall. It is really as necessary to their comfort as is the shearing to a sheep. Wait until you see them pulling the feathers out themselves and throwing them on the ground and you may know that the time has come for them to be relieved of the loosened feathers. These may be sold for 75 cents to $1 a pound, and there is always a demand for them.—M. E. Jaffa in The American Weekly."

BLACK HEAD IN TURKEYS.

There has been considerable loss among turkeys in Colorado this fall from black head, or what is scientifically known as Entero-hepatitis. The name black head was given because the head is supposed to turn purple when the turkey is attacked by the disease. This we have found not always to be true. The name Entero-hepatitis was given on account of the greater diseased areas occuring in the intestines and liver.

The disease is caused by a single celled animal parasite called Amoeba meleagridis. This germ, or protozoa, is taken into the body through the food, or water, and becomes lodged in the mucous membrane of the caecum, or blind gut. Here it produces thickening of the wall, due to inflammation, and, later, ulceration. The liver becomes infected, and the infected areas, the liver cells, are destroyed. In a turkey dead of the disease the liver is enlarged up to more than twice its normal size. Over the surface will be noted whitish or yellowish green areas. These represent the areas of dead tissue.

Treatment.

This consists principally in preventing the spread of the disease; when a bird has developed the disease there is no known cure. The premises should be as thoroughly cleaned as possible and all rubbish burned. Then, disinfect, as far as possible, with a five per cent solution of carbolic acid, or creolin. Sick turkeys should be isolated and not allowed to run around and spread the germs of the disease, and thus be the cause of others becoming infected. As there is no known cure for the disease, the turkey had better be killed and the body cremated. Feed should be given in troughs, rather than thrown on the infected ground, and thus increase the danger of infection. The watering troughs should be enameled so that they can be thoroughly cleaned morning and night. An intestinal antiseptic should be given in the water. One teaspoonful of dilute hydrochloric acid to each quart of water, or one teaspoonful of the crystals permanganate of potash to the ten quart bucket of water, may be given.—B. F. Kaupp, Pathologist, Colorado Agricultural College.

THE MITE.

The most deadly foe of the farm fowl is the little mite, whose smallness is counterbalanced by the enormous numbers in which he appears in the hen house. Without a doubt the numbers in an infested hen house will often run into the hundreds of thousands, perhaps millions. A single mite can do no harm, but thousands can. We have seen sitting hens killed by these mites, and there is no doubt that often their presence in the flock causes a very great decrease in the production of eggs by the fowls.

These mites are grayish in color before they have feasted on a fowl. Then they fill themselves with blood, and this shows through the transparent skin of the mite. This gives them the red color by which they are known—little red mites. In their natural color they are little noticed on the roosts and under the straw and other litter and in the hen nests they multiply with great rapidity and by March have filled every crack in the poultry house where they are permitted to remain.

Until the writer lost a sitting hen by the attacks of these little vampires he did not believe that it was possible for such small things to kill a large, strong, vigorous hen.

Having had no mites in the hen house for years, the writer did not believe that any existed there at the time two hens were set in rather dark nests. In about two weeks one of the hens seemed to be sick, though no particular trouble was noticed. Her comb had turned dark—almost black. She was taken from the nest and carefully examined, but nothing was discovered to indicate the source of the trouble. Of course, the mites which had been sucking her blood in the night had all left her by daylight and taken refuge under the straw in the nest. Two or three days after that the hen was found dead, half way off the nest, with her wings extended. The little vampires had sucked such quantities of blood from her that there was not enough for heart action.

Another hen was placed on the eggs, and in two or three days it was noticed that her comb was also becoming dark and that she was growing weak. She was taken off the nest and was almost too weak to move. The eggs were taken out and the straw removed. Then it was discovered the bottom of the nest was one mass of red, fat mites, every one of which had nightly feasted off the sitting hens.

There is no doubt that, in addition to the damage these mites do in sucking blood, there is another damage they do that must not be lost sight of—they spread disease from one bird to another. The losses from this cause must be very great.—Inter-Ocean.

PURE BREEDS ARE BEST.

Occasionally one comes across a farmer who belives that common scrub fowls are hardier and more profitable than the pure breeds, but the number is getting less every year.

It costs no more, after the first purchase, to keep a flock of improved fowls than it does to harbor dunghills or cross breeds. Either kind, when properly fed, will eat just about as much as the other. Of if there be any saving, it is so trifling as between one or the other kind, that it is not worth noticing. If judiciously provided for and tended from the shell upward, as all fowls should be cared for, either of the larger breeds will make good eating poultry at the proper age, and the hens of any one kind will lay an abundance of eggs, take them as they average, throughout the year.

Among any of the pure breeds there will always be found some exceptionally good ones for breeding purposes, or for exhibition. All these finer specimens will command the highest current prices among fanciers or amateurs, who are about to commence the propagation of prime stock,

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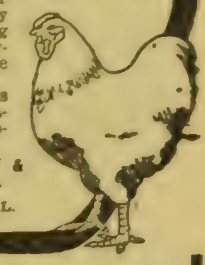

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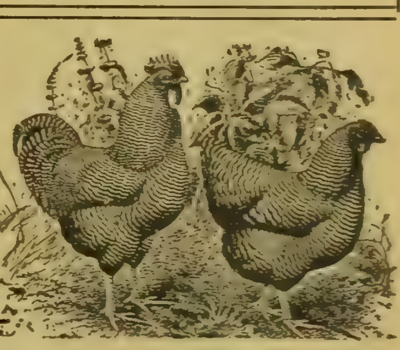

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and who are disposed to pay the better prices for such specimens. At the same time, the imperfect birds, as to form, color and other Standard requisite points, come to good size at maturity, and will pay much better for their keeping, at the right killing age, than will the runts or the smaller barnyard fowls, which cost quite as much to feed and to bring them to the proper state for slaughtering. The improved hens will, in a season, lay one-third more eggs, in number, and of a larger size usually, than will the dunghills. As broilers, the young cockerels of the heavy breeds are fitted for this purpose at a much earlier age, and so are far more valuable in this respect than are the lesser sized or common varieties.

In any view, then, it has come to be well determined that pure bred fowls are the most economical, the most valuable and the most desirable for all purposes, and although any of these better breeds cost a little more at the outset, the product they yield in twelve months in eggs and meat alone, saying nothing of the income that may be had from extra good specimens, will be found far more satisfactory and more profitable than will the same number of the ordinary dunghill breeds.—Kansas Farmer.

ALAMEDA COUNTY SHOW.

California imports ten million dozens of eggs annually. One city alone, San Francisco, receives two cars of eggs weekly from east of the Rockies. Yet, occasionally one hears the question of overproduction raised. No danger for years to come. Therefore the enthusaism displayed at the show of the Alameda County Poultry Association last week may be justified for commercial reasons as well as because of the love of pure breeding. It was a great show in quality and quantity. Including pigeons over 2,000 entries were made. Old timers declare, "This is the best ever held in Oakland." W. E. Stansfield of Hillsdale, Mich., judged the poultry, and a large number of perfect birds were found. Of the many varieties shown by owners from all parts of the Pacific coast almost every bird has been awarded a prize.

The pet of the show was a Rhode Island Red cock, the property of E. K. Healy, secretary of the association. This bird, one year old, has taken five first prizes. A White Orpington, the property of W. H. Ingram, has also taken five firsts, at San Jose, Stockton, Sacramento, Hayward and Oakland. James Stansfield of Fruitvale had a splendid hen of the Buff Wyandotte variety which has taken 30 first prizes in exhibits in all the coast cities. This hen took first prize in the show of the Alaska-Yukon Exposition in Seattle.

Other notable winners were Columbian Wyandotte hen owned by C. J. Seigfried of Alameda, Houdan hen by V. C. Smith of Napa, Silver Penciled Wyandotte hen by Mrs. Geo. Grindall of Hayward, Single Comb White Leghorn of E. R. Everett of San Jose and the Black Leghorn of S. F. Jones of San Mateo.

Secretary E. K. Healy is justly proud of the results of this great show.

CRACKED CORN.

For laying hens it is better to have the corn cracked rather than to feed it whole. The period of exercise is too short when whole corn is given, when cracked at least double the amount of work is given the hens in getting it, which is very important when eggs are the object in view. Then it can be fed more freely and generally than whole corn, but it should be cracked only as fed, then securing its full food value. Some object to its use on account of trouble in cracking it and the loss of the fine particles when fed in the litter. A good plan is to have a mill for this purpose, with a sieve for cracked corn to fall in. In this way the meal and fine parts are separated making no loss whatever. For chicks on free range cracked corn can be fed alone with good results.

Always keep young poultry out of wet grass and never allow them to run at large when the weather is cold enough to thoroughly chill them.

If the fowls are pulling the feather from one another' necks, mix a little powdered rhubarb with carbolated vaseline and apply to the bare places and surrounding feathers.

POULTRY SHOW DATES.

Seattle, Wash., Dec. 5-10, 1910. F. E. Barth, Secretary.

Portland, Oregon, Dec. 5-10, 1910. J. C. Murray, Secretary; M. W. Coates and Harry H. Collier, Judges.

Petaluma, Cal., Dec. 8-11, 1910. Fourth Annual Poultry Show of the Petaluma Poultry Association. H. R. Campbell, Secretary, Petaluma.

Santa Barbara, Cal., Dec. 18-19, 1910. The annual show of the Santa Barbara Poultry and Pet Stock Association. W. E. Lingard, Secretary, R. F. D. No. 2, Santa Barbara, Cal.

Ashcroft, B. C., Dec. 23-31, 1910. W. Maxwell, Secretary; H. H. Collier, Judge.

Tacoma, Wash, January 3-11, 1911. Frank L. White, Secretary, South Tacoma; Miller Purvis, Judge.

San Diego, Jan. 4-5-6-7, 1911. San Diego Pigeon and Pet Stock Club. A P. A. rules. W. C. McDougal, Secre-

Los Angeles, Cal., Jan. 5-11, 1911. Annual of The Poultry Breeders Association of Southern California at Chutes Park. A. H. Memler, Secretary, San Gabriel.

Colfax, Wash., Jan. 10-14, 1911. H. Rosenkranz, Secretary. H. H. Collier, Judge.

Walla Walla, Wash., Jan. 17-21, 1911 H. Dickinson, Secretary; H. H. Collier, Judge.

Jerome, Idaho, January 24-28, 1911. Wm. N. Hardwick, Secretary.

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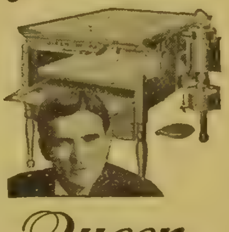

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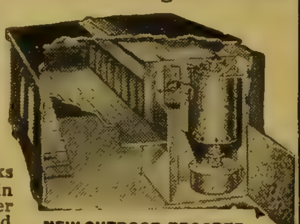

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Bees and Their Care

TREATING FOUL BROOD.

In the East I never had foul brood; and when I met it face to face in this country, I was somewhat nervous as to my ability to cope with it. However, as I was associated with Mr. J. K. Williamson my fears were soon over, he being a very careful observer. This article is largely due to his headwork.

In the spring of 1903 Mr. Williamson had his bees rented to two parties, one of whom, I am sorry to say, was not as careful with the disease as might be after having been warned of the possible existence of foul brood. The result was, in the spring of 1904 the disease had been spread by the interchanging of combs to such an extent that it was very difficult to deal with it. The season was very dry, with no honey-flow; and with the usual tendency in such cases for bees to rob, it would have been absolutely ridiculous to have put these diseased colonies on foundation, as it would have meant starvation. We just watched them closely, and if any showed signs of being overcome by disease we melted the combs, scalded the hives, and counted the colony lost save for the hive and wax.

Right here let me say that we have never had any trouble with hives used again after being properly scalded. Some of these colonies were carried over until the following spring with very little indications of trouble. Some we were compelled to melt up to save them from being robbed out, and the disease thus spread again. A few in which only a few cells appeared were "carved out"—that is, a small piece of comb was cut out around the diseased cells and carefully destroyed; and, strange to say, most of the carved-out colonies are still intact, with no sign of the disease having reappeared after four years.

One colony, however, that was carried over during the dry year and put repeatedly on foundation the following season, and given nearly every known treatment for cure, during the following season was finally, as a last resort, sulphured at night, and bees, frames, brood and honey were burned, after which the hive was scalded and used again. The wax from this colony might have been saved; but so many failures make one desperate, and thus it ended.

I do not believe disinfecting is equal to thorough scalding, as this method does not reach the cracks and crevices as thoroughly as scalding water; neither do I see the object in scalding frames with lye and corrosive sublimate when hot water is just as effective, in my mind, and cleaner; besides, one can then save the adhering wax.—P. C. Chadwick of Redlands, in Gleanings.

WHY BEES GNAW COMBS.

It is stated by some good authority that if bees are given full sheets of foundation, all worker-sized cells, their instinct and craving will be so great for drones and drone-sized cells that they will often gnaw down a portion of the foundation and rebuild it with drone comb. I have watched this closely for the past 25 years, and have yet to see a case where the bees gnawed down the foundation and rebuilt it at once with drone comb. You will notice that I emphasize the words "at once," for I have many times known bees to gnaw away at least a third of all the combs in the brood-chamber and later rebuild it with drone comb; but at the time the gnawing was done the bees had no thought of rearing drones or building drone comb. My experience is that this gnawing away of either combs or comb foundation is done at a time when no honey is being gathered; and the more prolific races of bees, such as the Cyprians, Syrians, Carniolans, etc., are much worse at this naughty act of gnawing their combs than are the native black bees or the Italians. I will try to explain further why this is so. Of course, if comb foundation is in any way defective or distasteful to the bees they will proceed at once to gnaw it down and rebuild with both worker and drone comb; but at the time this gnawing away of ready-built combs takes place they will as readily remove drone as worker combs—that is, provided the combs are alike as to age, etc.

The question may be asked why bees gnaw combs, anyway. The most common cause is the need of wax. At a time when but little honey is being gathered, bees secrete little or no wax; if a colony has a good queen and plenty of stores, brood-rearing will continue more or less all along, and there is a constant call or need for wax by the bees for capping the brood and mixing with propolis to chink up cracks with, etc. At such times bees will not draw on their stores sufficiently to secrete wax; so to supply this want or need for wax they will begin gnawing the combs near the bottom next to the entrance of their hives, and will continue this gnawing until brood-rearing ceases or until a honey-flow comes on; and the more prolific races of bees, as above mentioned, will rear more brood during a honey-dearth than either Italian or black bees, and so, of course, need more wax, and gnaw their combs worse. It makes no difference at such a time whether it is drone or worker comb—it will be gnawed just the same.

Then these combs will not be rebuilt again until a honey-flow comes on and the bees begin to get crowded for room, and, of course, at such times it is only natural for them to build drone or store comb. I doubt whether bees ever gnaw down either comb or comb foundation with the full purpose in view of rebuilding it with drone comb.

We all know that there are other causes for bees gnawing their combs, such as moldy moth-eaten combs, and combs where pollen has caked and hardened in the cells, etc.

Bees here in the south will swarm if well supplied with honey at the swarming season, whether new honey is coming in or not. I have known them to swarm when no honey whatever was being gathered. If hived on foundation at such times they will draw out a small patch in the center of a few sheets, and the queen will start laying in the cells drawn out. By this time the bees will have used up all the wax scales they secreted before they left the parent hive, and they at once start to gnaw the foundation to supply the wax to cap the brood with, etc., and, later, a honey-flow comes on, they become prosperous, and soon more room is needed, and they will build store or drone comb in the places where they had a short time before gnawed away the foundation. The apiarist concludes, when he examines his bees and sees this drone comb where he had put in full sheets of foundation a short time before, that the bees had gnawed down the foundation for the purpose of building this drone comb, when the truth was they had no thought of building comb of any kind when the gnawing was done.—Gleanings.

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Irrigation and Forestry

WATER IN MOUNTAIN STREAMS.

Look out for the campers above and protect the campers below, says Dr. Raymond Russ, Acting Secretary State Board of Health, in warning vacationists about stream-borne typhoid germs and exposing the teeth of fallacious old "saws" about the rapid self-purification of running water.

"The typhoid fever bacillus," states Dr. Russ, "is not known to multiply under natural conditions outside of the human organism. When thrown off in the wastes of the body it eventually dies unless it succeeds in gaining an entrance to another human host. But it is capable of living for several weeks in running water. Mountain streams through shaded canyons afford swift and comparatively safe means of passage for these deadly wanderers. Unwary campers along the banks make a favorable field for invasion. Those who give credence to fallacious old saws about water purifying itself in running two feet, or two miles, or some other absurdly short distance, are especially open to attack.

"Water appearances are deceitful. The presence of typhoid germs in a stream is not necessarily accompanied by turbidness, offensive odor, or foulness of taste. It is best for campers to boil their water unless they can make sure that the sources of the stream are unpolluted. Danger may lie in the presence of a careless camper a hundred yards up stream who is coming down with typhoid fever. Or twenty-five miles further up, the stream may catch the underground drainage from the toilets of a lumber camp where there are several "carriers," that is, persons who have had typhoid fever a number of weeks or months before and who still continue to throw off virulent disease germs in the wastes of the body. A state law makes stream pollution a misdemeanor, and vigilant vacationists can greatly aid in its enforcement.

"Protecting the campers on the stream below is simply a matter of making it impossible for wastes of the human body to drain into the water. A good substitute for a toilet vault is a bucket or oil can partly filled with dry earth, all contents to be covered with dirt or ashes and finally buried. Or dig a pit a safe distance from the stream and keep contents covered with fine dirt. Either of these devices will also prevent the breeding of flies and the carrying of intestinal diseases by flies, and will serve to keep the woods sweet and clean. An odorless and fly-proof camp kitchen drain can be made by thrusting a length of stovepipe down a squirrel hole or rotten stump, tamping damp earth around the base, and capping it with a bit of board. Water from wash-tubs can be poured in sump-holes dug in sand bars."

VALUE OF YOUNG GROWTH.

In an action for fire trespass on the Black Hills National Forest brought by the United States against the Missouri River and Northwestern Railroad, the jury has awarded damages to the Government not only for the loss of merchantable timber but also for the destruction of unmerchantable young growth.

This is regarded by Government officials as establishing a very important precedent. So far as is known at the U. S. Department of Agriculture, it is the first time that any court has recognized what foresters call the "expectation value" of young growth as furnishing a basis for the award of damages. The difficulty in the way of such an award in the past has been that there was no way to prove to the satisfaction of the courts the money value of the loss suffered.

The award in the South Dakota case followed the presentation of evidence as to the cost of work in reforesting which the government is actually doing in the Black Hills. The amount claimed for the young growth burned was $12 an acre, and the claim under this item was allowed in full by the jury. The total amount of damages claimed was $3,728.85, of which $2,634.45 was for merchantable timber destroyed or injured by the fire.

It is recognized by foresters that the cost of artificial reforestation will not always furnish a fair basis for estimating the damage to forest reproduction. Where new growth can be expected by natural sowing from seed-trees on the ground within a short time, artificial planting or sowing is an unnecessarily expensive method. To meet such cases what are known as "yield tables" are being prepared. By the use of these the loss can be shown in terms of the final crop and the time necessary to produce it.

Thus, if it is known that ten thousand feet of timber per acre can be cut once in seventy years, it is easy to calculate the value of the crop when it is ten years old by discounting from its value when mature. In European countries where forestry has been long practiced this method is regularly applied in selling, condemning, or estimating damages on forest property. It is also used abroad in insurance, which would be impracticable if there were not both an accepted basis for determining the loss suffered and a reasonably accurate knowledge of the hazard involved.

UNDERGROUND WATERS FOR FARM USE.

The United States Geological Survey has just issued a report by M. L. Fuller entitled "Underground waters for farm use." Mr. Fuller enumerates the various kinds of rocks and deposits that contain and convey underground water, describes the several types of wells and discusses measures for the protection of springs and wells from pollution. The report, which is issued as Water-Supply Paper 255, also contains sections on methods of well boring, the use of cisterns, the divining rod, the advantages of different kinds of wells, and the location and cost of wells. It covers 58 pages and is illustrated by numerous plates and figures.

The Divining Rod.

In speaking of the divining rod Mr. Fuller says, "No appliance, either mechanical or electrical, has yet been devised that will detect water in places where plain common sense will not show its presence just as well. The uselessness of the divining rod is indicated by the facts that it may be worked at will by the operator, that he fails to detect strong water currents in tunnels and other free courses that afford no surface indications of water, and that his locations in regions where water flows in well-defined channels are no more successful than mere guesses. In fact, its operators are successful only in regions where ground water occurs in a definite sheet in porous material. In such regions few failures to find water can occur, for wells can get water almost anywhere."

The report can be obtained without charge by applying to the Director of the United States Geological Survey at Washington.

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Queries and Replies

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Grafting Olives.

Can a 10 or 15 year old olive orchard of small undesirable fruit be successfully grafted or budded to larger variety?—Subscriber, Hemet.

Fortunately the above query came to the office at the same time as Mr. Geo. C. Roeding of Fresno called and from him we have the favor of an answer as follows:

"Yes. It is entirely practicable to graft trees ten or fifteen or even fifty years old over to another variety. The most satisfactory method of doing this is to take the tree and cut off all its main branches to within four feet of the point where they diverge from the main stem, with the exception of one which, if it is possible to do it, should be left on the southwest side of the tree in order to shade the grafts during the heated summer months. The time to do the grafting is either during the months of February and March or just as soon as the trees show signs of growing and the bark will lift readily. We never use scions smaller than one-fourth inch in diameter and up to three-eights inch. The number to be inserted depends on the size of the stub to be grafted. As a general rule the scions should be placed about two inches apart.

"Cut scion just as you would do or wedge graft, except that the cut should only be made on one side. Make an incision in the bark on the side of the stump, following the same method as in budding excepting that the horizontal cut is left out; lift the bark with the edge of the knife just as you would do in budding. This will permit the scion to be slipped in readily beneath the bark. When this work is completed and the number of scions inserted, wrap the stump with cotton twine using six-ply or if the stumps should be ten or twelve inches in diameter, single strand rope could be used to advantage. Be careful to wax over the top of the stub and all around the sides as far as the cut has been made. Use liquid grafting wax for this purpose.

"If all the scions grow so much the better. Do not disturb them for at least a couple of years or even three for that matter, until the stub has been entirely covered with a new growth of wood. This will insure a perfect union. This method of grafting will bring better and quicker results than any other that can be followed."

lfalfa Tea for Calves.

Please give the manner of prepar- alfalfa tea and method of raising es on skim milk.—Subscriber.

epare alfalfa hay tea by putting water on a quantity of alfalfa es. The floor of the barn mow plenty of loose leaves that are for this use. We usually allow -quart can full of leaves to each of water. Steep it the same y other tea. We prefer to use y with it as the wheat bran is much on the protein order to as well with alfalfa hay as rolled barley. This is cooked into a mush. Bring it to a boil and then bury it in a hay box so that it will cook all day. If one pint of rolled barley is cooked in a full quart of water in a tightly-closed can the mass will be a mush. To each quart of the hay tea add at first a teacupful of milk and a teacupful of the mush. Gradually drop out the milk and increase the tea to cover the amount withdrawn. We would be very glad to hear this gentleman's experience in raising calves on clover tea in the East.—M. E. S.

Indian Runner Ducks.

Where may I secure White Indian Runner ducks' eggs, also when is the proper time to incubate them?—Subscriber, Fresno.

From the keen inquiry for Indian Runners we imagine the poultry people are missing an opportunity in not announcing their stock in the columns of the Cultivator. This breed seems very popular, and justly so.

Sugar Beets in Imperial.

What is the best time of the year to plant sugar beets in Imperial Valley, and will they grow in salty ground?—Subscriber, Holtville.

Sugar beets will endure considerable alkali, and we doubt not will the common salt that prevails in some parts of the Imperial. Some planters on alkali ground maintain that sugar beets reduce the alkali and make the soil acceptable to other plants. As you do not give the percentage of alkalinity we cannot answer you definitely. In any case, actual test is preferable. As to the time of planting, we cannot say definitely, but would suggest very early, possibly December or January.

Possibly Persimmons.

I send leaves and bark from trees on place just purchased. Can you tell us the variety and whether they are worth preserving?—Subscriber, Santa Ana.

Only the merest guess is possible, but from shape of the leaves and appearance of the bark we would say that they may be from persimmon tree. As to whether it is a good variety and worth preserving only testing can tell. Leaves with blossoms or seed would enable a botanist to determine definitely.

Fumigation.

I have a few orange trees infested with scale. How may I fumigate, as I am not located where I can obtain services of professionals?—Subscriber, Pasadena.

The only requirement is a perfectly tight tent or other enclosure that will hold the gas for an hour or more. Then secure a good quality of cyanide of potassium and sulphuric acid. Use in proportions of one ounce of cyanide, one ounce of sulphuric acid and three ounces of water. The acid and water should be placed in a vessel under the tent after it is arranged so as to be practically gas tight, then at the last moment drop in the cyanide. Use in the proportion of one ounce of cyanide to each 100 cubic feet of space. The work is to be done at night, or at least when the sun is not shining. It

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Unsolicited Testimonial Just Received from Large Ranch in Kern County:

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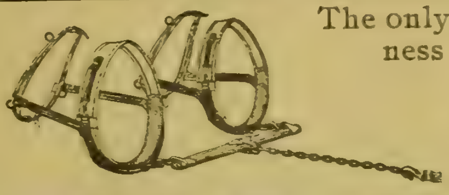
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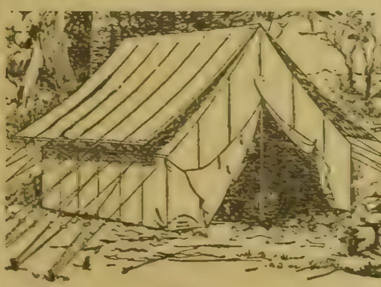
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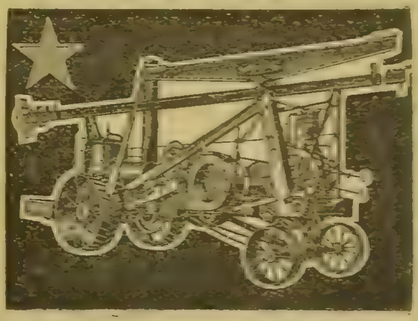

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done in the early part of the evening and allowed to remain over night no harm is done. This strength is sufficient for black scale. For purple scale or mealy bug a 25 per cent. stronger dose may be used.

Gum Disease.

I send bark from sick orange tree. Looks like gum disease except that it is confined to upper part of trunk and larger branches. The new green bark replaces the old more readily than with the regular gum disease.—Subscriber, Lakeside.

This we think is nothing more or less than the ordinary gum disease and the usual treatment with neat's foot oil and slitting of bark and correcting soil conditions is all that is needed.

White Scale.

I send twigs covered with small white insects. What are they and what is the treatment?—G. H. H., Lakeside.

These are young and very small white scale, sometimes called cottony cushion scale. Apply to the State Horticultural Commissioner at Sacramento for colony of novius cardinalis. If direct treatment is preferred, spraying with any of the ordinary soap sprays will reduce it.

Peonies in California.

Why are not peonies grown in this state?—J. C. C., Los Angeles.

The Cultivator quoted from an Eastern paper in last week's issue an article on peonies as a matter of general interest, but we must say they have as a rule done poorly in California. Our arid conditions seem to be against their best development. Near the coast where warm and moist and grown under shade, they do fairly well. Magnificent specimens have been grown in glass houses where moisture conditions could be controlled. California's direct sunshine is, however, too intense.

Clearing Off Ferns.

Please tell me how to clear land of heavy growth of ferns? They are the large kind six and seven feet high and completely cover the ground.—Subscriber, Ferndale.

We know of no better way than hand work with such a problem. Presumably the ground is so moist that there would be even at this season of the year practically no dry material so that they could be burned. Of course, chemicals like salt and acids or a strong solution of sulphate of iron might help, but it might also seriously injure the soil for any other crop. They may possibly be mowed off and allowed to dry, later burning off and plowing under. Have our subscribers experience? This is an absolutely new problem to us.

Mating Turkeys.

In mating gobblers with hens is it advisable to mate from same brood? Have fine young gobblers and would like to use them unless it will be inbreeding too much. They are from large flock so only a small percentage would be full sisters. How many toms are required for 50 hens?—J. H., Pixley.

If this is the first year of inbreeding, it would probably be all right, but you should know something of the history of the flock and if good fresh blood has been used previously, you will probably have excellent results for another year. One male is sufficient for 18 or 20 hens.

VETERINARY

Answers in this column by Dr. Fred G. Matthews, are without charge. For immediate mail answer remit $1.00. In writing questions give full symptoms or particulars of injury of animal.

Garget.

Would you please tell me what to do for a cow, which has one teat larger than the rest. There seems to be a bunch at the base of this teat, in the udder, and blood sometimes comes with the milk. The teat is sore, at times, and causes restlessness while milking.—Subscriber, Modesto.

Garget may be treated by applying Iodine Petrogen twice daily after milking. Gentle hand rubbing will hasten and insure penetration of the medicine, and will encourage the absorption of the bunch. Care should be exercised, however, in the manipulation as too vigorous handling of the part might result in congestion of the udder. It may be well to start treatment by giving one pound of epsom salts, dissolved in one or two quarts of water, as a drench and follow with one tablespoonful of hyposulphite of soda in the feed twice daily.—F. G. M.

Treatment for Bloat.

J. H. R. of Yuma, asks in a recent issue for a cure for bloat and I wish to tell of a remedy we use here with perfect success.

Procure about five feet of ordinary rubber water-hose and when you find one of your animals bloated, no matter how badly, grease the hose, insert in the mouth, push gently down the throat until you reach the stomach, which can be told by the presure of escaping gas through the hose, which will often be so violent as to swing the hose from side to side, and in a few minutes the animal will get up and go to feeding and will be as well as ever, but of course it is as well to be a trifle careful of the feed for a day or two, and if possible give them a change of diet such as a few feeds of dry hay, and you will have no further trouble.—Mrs. J. H. Rothwell, Mesa Grande.

Matted Tail.

I have a young horse which seems to have a beautiful tail, but the hairs are matted very tightly. Do you know of a remedy to correct the condition?—Subscriber, Winters.

Medicines will not separate the entangled hairs. Use a "mane and tail comb," or a blunt, round-pointed awl and carefully comb out every matted bunch. A little vaselin worked into the hairs will aid in preventing the recurrence of the trouble. The condition is common in horses which are not regularly groomed, such as horses at pasture, etc., and cannot be attributed to disease.—F. G. M.

Indigestion and Scours.

One of our horses has indigestion or scours. Would you kindly tell us what to give him?—Subscriber, Clovis.

Feed old barley hay and a moderate quantity of grain and regulate the amount of water given. Allow for access to salt. Mix in the feed, twice daily, one tablespoonful of a mixture of equal parts of powdered chalk, baking soda, ground ginger, gentian root and dried iron sulphate. —F. G. M.

Imperial Valley has ginned about 1500 bales of cotton.

This is the Troutman Orchard Heater and here is a copy of letter received from a well-known grower and manager of an orange association, whose name you can have for the asking and who has ordered the Troutman heaters for his grove:

Highgrove, Nov. 25, 1910.
Mr. W. H. Fowler,
Los Angeles, Calif.
Dear Sir::—

"Beg to say on our last test of the Troutman Heater we had three pints of oil remaining when we fired up the stove at night, and this amount of oil burned two hours and twenty-five minutes, giving at all times a uniform flame and even heat.

"In morning I began to cast about for some evidence of soot on trees and fruit, but was unable to detect any on either; found some minute particles on top of newspaper that you had the heater wrapped up in."

and in reply to my question asking if I could publish his letter as a testimoni he further says: "While I did not write for publication, what I said in referer to the heaters is the result of my own personal observations and are facts whi convince me that the Troutman Heater is the best heater on the market toda

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ADDRESS________________

(Continued from Page 531)

according to all scientific theories. This is another of those contradictions. Facts show this to be true, while actually the mildew spores should not be on the vine and neither should the vine is disinfected so that it does not form a good ground for mildew attacks. The matter must be left at the present state of our knowledge without explanation. The vine sprayed with Bordeaux does not need any sulphuring, as a rule, in Fresno county Sometimes here is a year when the mildew is extreme and persistent attacks occur, when it is necessary to use a little sulphur in the summer as a dust on the vines. I have sprayed and used no sulphur more years than have used the sulphur. The years used it, I only needed it in small, pecially damp places.

Sprays.

The lime and sulphur now comes in the convenient form of Ortho or Rex. Either are good, and to be preferred to an attempt to make the mixture at home. Bordeaux mixture is cheaper to apply and we use it mostly, as it does as well and the men prefer to handle it. The standard mixture is five pounds of blue stone, seven of lime, to fifty gallons of water. The excess of lime is merely to make the vines show a dress of blue wash, then one can be sure that every part has been reached. The vineyard is always an interesting study, and we are more and more fascinated every year. Cows and horses show their breeding, and go on increasing in either improved or deteriorated forms. The work shows up soon and one knows if he is on the wrong road quickly. The vine or the tree starved, stunted or abused is much longer in coming to full perfection, and never gives the results that the tree or vine gives that has never been stunted. It is the common way to consider that it is only a season's loss of growth if the vines are stunted by insect pest or lack of care. I doubt this thoroughly, and also believe that inheritance in the plant life is even stronger than in animals. The cuttings from a stunted vine will not make as good a vineyard as from a vigorous producing one.—M. E. Sheridan.

AUTOMOBILES FOR FARMERS.

A man who practices intensive farming in a section where land values are very high recently said he could not afford to have pasture for his horses, and he kept only a minimum number to cultivate his crops. He said he had no extra team, and could not afford to unhitch his horses from the cultivator to go to town. As a result he was forced to the use of an automobile to do his running around.

It was a shrewd man who said this; he has all his feed to buy, and knows how expensive it is to keep horses when they are not working. His conclusions that he could not afford to do without an automobile were reached after careful deliberation, and he has had no reason to change his mind.

We wonder how many other readers have reached the same conclusions?—Green's Fruit Grower.

The Claremont Farmers' Club will meet next week at the home of the President, Prof. A. J. Cook, at Claremont, on Saturday, Dec. 10. The principal matter of discussion will have to do with horticultural commissioners and their manner of appointment. Without question interesting talks will be made and some politically appointed commissioners may get a roast. The club hopes for the attendance of Los Angeles county's full board of supervisors.

HOUSEHOLD HINTS.

Clean the bamboo furniture with a small brush dipped in warm, weak salt water. The salt will prevent the bamboo turning yellow.

To make velvet look like new, dip a brush in clean, damp sand and lightly brush the velvet against the pile, then shake out the sand.

For varnishing leather goods, take equal parts of gum arabic, water and the white of an egg, mix well and apply. If the article is likely to be handled much, the white of an egg with less water than egg will serve.

To remove the grease from the wall paper, mix pipe clay with water to the consistency of cream, spread it on the spot and leave until next day, then brush off. If necessary, repeat.

To remove the iron rust spots quickly, have a teakettle of water boiling on the stove; take the garment dry; cut and squeeze lemon juice. Hold the spot over the steaming kettle spout and the spots should disappear.

For the nickel-plating that has rusted, try covering the spot with muttton tallow and let stand for several days; then follow this treatment with a rubbing with a good metal polish, and then a thorough washing with strong ammonia, rinsing with clear water, and giving a final polish with dry whiting. This is generally effective.

In cleaning the windows, rub them with a cloth dipped in a thin mixture of whiting and ammonia, let them dry and then polish with a soft dry cloth. Don't use soap, as it streaks them.

The more lovable we make ourselves in life, the more we grieve our friends when we die.

The way land is selling now, we shall have to revise the old saying that a thing is dirt cheap.

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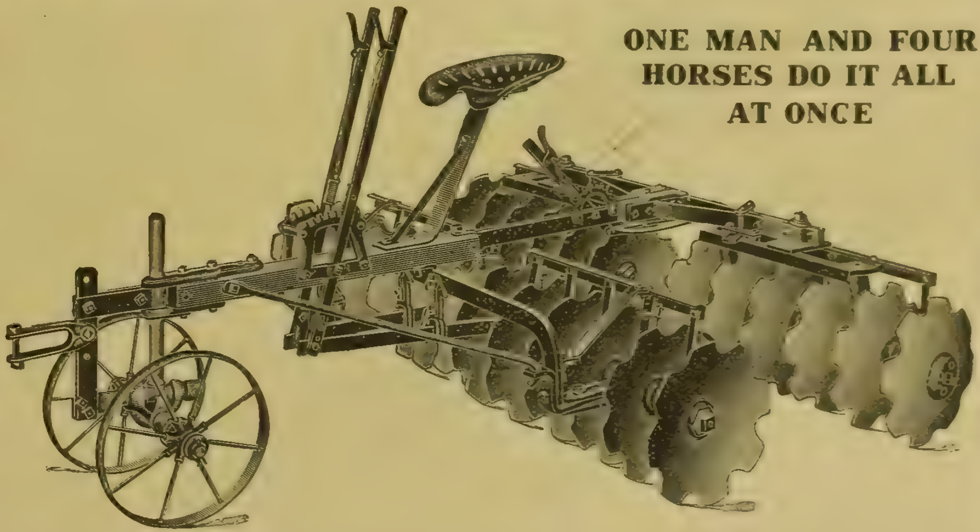

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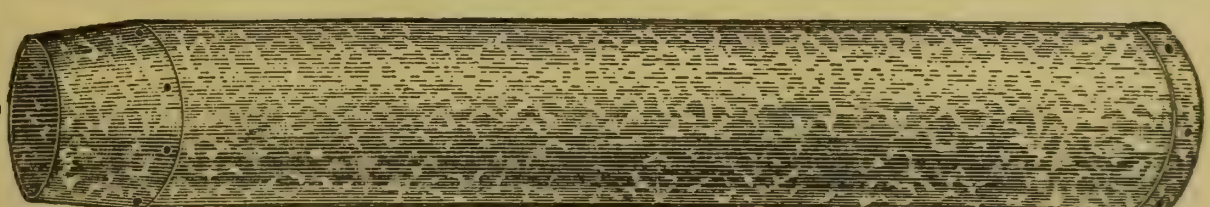

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LOS ANGELES

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General Agriculture

DODDER.

Examination of many samples of clover and alfalfa seed received at the Purdue Experiment Station, has revealed the presence in the seed on our market, of four distinct species of dodder. Since these four kinds distinctly differ from one another in one or two important respects, and at the same time resemble one another in certain other respects, attention is here called in general terms to the different kinds.

Clover Dodder.

This infests clovers and alfalfas. It is found in Europe and other foreign countries producing clover, also in the states east of the Mississippi and in the northern Pacific states. The seed is in general, gray to brown, nearly round, or somewhat flattened; the surface is finely pitted. It is from 1-30 to 1-24 of an inch in diameter.

Large-seeded Alfalfa Dodder.

This occurs commonly in western alfalfa growing states, and is being found in the western alfalfa seed used in Indiana. The larger seeds of this dodder are about the size of the smaller alfalfa seed, and are therefore hard to clean out thoroughly. On the other hand they are smaller than the larger seeded red clover, and should be quite easy to clean from it. The size and shape of the seed is variable, the larger seeds, however, are nearly circular, and are gray to brown in color, sometimes having a slight pinkish cast. The surface is seen, under a lens, to be very rough.

Small-seeded Alfalfa Dodder.

This is very common and destructive in the western states, and has been found in samples examined in the seed laboratory here. This is to be expected as Indiana imports much western-grown alfalfa seed. It does little or no damage to other clovers. The seeds are very small, oval, and owing to compression in the pod, have two flattened faces; the surface is roughened; color, usually yellowish, which may have a tinge of green or purple.

Field Dodder.

This is apt to appear in either clover or alfalfa, whether grown east or west of the Mississippi, and is extremely destructive. Field Dodder seeds are larger than those of Clover Dodder, or of Small-seeded Alfalfa Dodder, notched at the scar, rounded on one side, and variously flattened, angled, or grooved, on the other. They vary in size from 1-24 to 1-16 of an inch in diameter, and are variable in color, being yellowish, purplish, dusty or grayish brown with a decided pink or flesh cast.

Notice that the seeds of all the dodders mentioned here are more or less rough, while clover and alfalfa seed is smooth with a slight gloss. The scar on the dodder seed is much less evident than is that on the clover seeds. Dodder seeds are generally smaller than good red clover seed or alfalfa seed. All who use or handle the smaller farm seeds are urged to procure a good magnifying glass. Such a glass is indispensable in the examination of seed for dodder and other impurities. A tripod lens costing about 50 cents seems to be as
convenient a form of lens as any
the market. As a further means
identifying dodder seed, soak the l
ter in water a few hours, then wi
needles pick a seed apart, and wi
the aid of the lens, find the embry
or undeveloped plant within. In do
der the tiny plant within the see
will be found to be slender, threa
like and coiled.—Indiana Exp. St

DOWNTRODDEN FARMERS.

I am only doing justice to the far
people when I affirm that their ide
of life are higher, their motives pur
and their records of crime less th
those of any other class of peop
The great majority of them are ho
est, industrious, intelligent and cha
table. What can constitute a high
type of citizenship?

The atmosphere of the farm ho
is pure. It speaks for itself. Fr
it has come the majority of t
greatest men and women of the n
tion. Statistics prove this asserti
Nowhere does the love of home see
so strong as among the farm peop
and it is a recognized fact that "t
home makes the nation." Theod
Roosevelt realized this when he sai
"There is no more important pers
exerting her influence upon the l
of the nation than the farmer's wi
no more important home than
farmer's home, and it is of natio
importance to do the best we can
both."

You ask of the decline of the co
try church? Religion, like everythi
else the farmer needs, is very exp
sive these days, and his attenda
at church is barred in consequen
And again, how can you expect h
to be extremely interested in an
ganization that is sending thousa
of dollars to foreign countries to e
cate their boys and girls, when
knows by working as hard as he
he cannot give his own children
education they ought to receive?

Ask any merchant in any town
city to what class of people he wo
rather extend credit, and he will
you the "farmer" every time; but
order to pay his honest debts
farmer and his family deny th
selves many of the pleasures of
and some of the necessities. Peo
representing the great basic indus
of this country should not be obli
to do this. They should receive
compensation for the products of th
farms.

The farmer is industrious. He
to be. If you doubt it, go into
country any morning at 5 o'clock,
earlier, and see for yourself. Th
are no eight-hour unions for th
The thought of the farm people
not how much I can get out of y
but how much can I do for you?
old saying that "Virtue is its own
ward" does not seem to apply to
farmer on this earth, but it may
the hereafter. He does not seem
be a part of anything really, ex
work and taxes. The same tax
is placed upon him as upon the
whose business pays a 25 per
dividend. He does not receive
position of honor and trust that
given men in other callings.
knows that in the majority of case
is only the poorest of any profes
who stay in the country, for the
tractions of the great American

r to most people are far greater an the song of the birds, the hum the bees, green grass, pure air nd beautiful sunshine.

His charity! If you are unfortunate k any one in the country for money food. If they have it, see how ickly you will receive it. Ask in e city for the same, and you will t—thirty days. I know there is a w against begging, but there is no w which prevents a person from ing hungry or unfortunate. Charity ward all is one of the strong char- teristics of the American farmer.—nday Globe.

THE SULZER BILL.

The Sulzer bill to reduce postal tes, to improve the postal service d increase revenues, introduced at e last session and to be consid- red at the coming session, is as fol- ws:

"The common weight limit of the mestic postal service in the United tates is hereby increased to eleven unds, the common limit of the Uni- ersal Postal Union, and that in the eneral business of the post-office the e cent an ounce rate on general erchandise—fourth-class mail matr—be, and is hereby, reduced to the ird-class rate, one cent for each two nces or fraction thereof.

"Section 2. That the rate on local tters or sealed parcels posted for livery within the free-delivery serves is herby determined at two cents parcels up to four ounces, one nt on each additional two ounces; t nondelivery offices, one cent for ch two ounces.

"Section 3. That all mail matter llected and delivered within the ifferent rural routes of the United tates is hereby determined to be in e class, with rates, door to door, etween the different houses and laces of business and the post-office r post-offices, on each route, as fol- ws: On parcels up to one twenty- urth of a cubic foot, or 1 by 6 by 2 inches in dimensions and up to one ound in weight, one cent; on larger arcels up to one-half a cubic foot, r 6 by 12 by 12 inches in dimensions d up to 11 pounds in weight, five nts; on larger parcels up to one bic foot, 6 by 12 by 24 inches in imensions and up to twenty-five ounds in weight, ten cents. No arcel shall be over six feet in length, d in no case shall a carrier be bliged to transport a load of over 0 pounds.

"Section 4. That on all unregis- red prepaid mail matter without declared value an indemnity up to $10 hall be paid by the Post-Office De- artment for such actual loss or damge as may occur through the fault of e postal service, and this without xtra charge. Certificates of posting hall be provided on demand. On egistered parcels of declared value, n on which the fee for registration, surance, and postage has been duly repaid, the Post-Office Department hall pay the full value of any direct ss or damage that may occur hrough the fault of the postal service. The fees for insurance and reg- stration shall be as follows: For egistration and insurance up to $50, 0 cents; for each additional $50, 2 ents. No claim for compensation ill be admitted if not presented with- one year after the parcel is posted.

"Sec. 5. That all acts and parts of cts inconsistent with this act are ereby repealed.

"Sec. 6. That this act shall take effect six months from and after the date of approval thereof."

AMOUNT OF HAY IN THE STACK.

Comparatively few ranchers have facilites for weighing the hay fed or sold. On large ranches equipped with wagon scales, owners seldom care to go to the trouble of weighing hay. Perhaps no method of ascertaining the weight is more accurate than the old-fashioned way of measuring the square of the stack and the peak separately to get the valume of hay in cubic feet. The rule most generally used is to measure the distance over the stack by throwing a rope or tape from one side to the other, letting it come to the ground. To this distance add the width of the stack in feet. Divide by four to get the square of the end of the stack. Square this number to get the square feet in the face of the stack and multiply by the length to determine the total number of cubic feet.

Another rule is to take one-third the over and multiply by the width for the end surface, then multiply this result by the length. Another is to take the width from the distance over, divide by two for the height, multiply by the width and this product by the length. A rate adopted by one of the Legislatures is to multiply the width by the distance over the stack and this product by the length and divide by four. This last method was investigated by the Department of Agriculture and the result found too small by 30 per cent. A better plan is to subtract the width from the distance over, then multiply by the over, this by the width, this by the length, and the whole product by 0.225, and divide by the height of the stack, which will give the total number of cubic feet. All measurements should be in feet and fractions of a foot.

No two of these five rules bring the same result. For example, the volume of a stack of hay which measures 29 feet over, 15 feet wide, 39 feet long and 9 feet 9 inches high, will by the first rule be 4179 cubic feet; by the second rule, 5655 cubic feet; by the third rule, 4095 cubic feet; by the fourth rule, 4241 cubic feet; and by the fifth rule, 5481 cubic feet. This was an actual case which was settled by the fifth rule, although it made this small stack cost $14.05 more than would have been the case had it been figured by the first rule which is in general use.

This difference is an item of some importance to the producer. It is claimed that the fifth rule gives results with not more than from two to four per cent error. The number of cubic feet of hay required to weigh a ton varies with the kind of hay, its maturity, and how long it has been allowed to settle in the stack. It is generally conceded that five hundred cubic feet of well compressed timothy hay is required to make a ton, and when timothy is first put into stack, or if it is too ripe, coarse, and loose it will take 700 cubic feet. For alfalfa which has settled 30 to 60 days we usually figure a cube eight feet on one side or 512 cubic feet equal to a ton. For fine native hay or alfalfa that has settled six months or more, a cube seven and one-half feet to a side, or 422 cubic feet, is considered sufficient for a ton. Some native hay may be even heavier than this when it is well settled in the stack.—Field and Farm.

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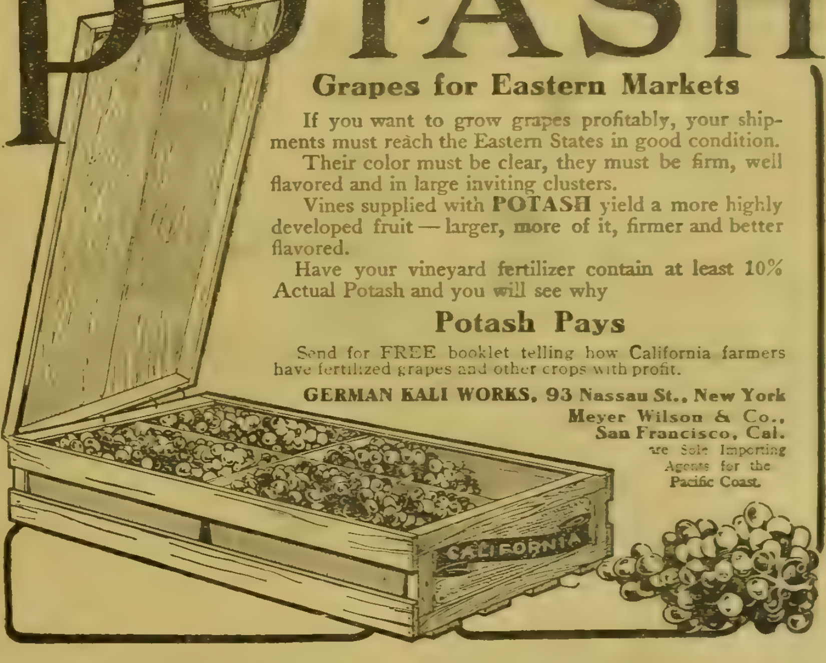

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Send for FREE booklet telling how California farmers have fertilized grapes and other crops with profit.
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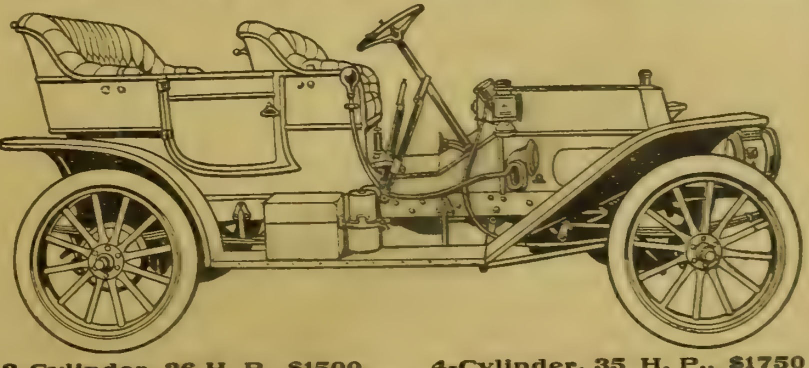

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For Sale—Registered Holstein Bulls; 1 to 2 years old. Some sired by Prince Juliana, brother of former world's record heifer, Juliana De Kol. Dam and granddam, A. R. O. cows. Three record-breakers in some of their pedigrees. M. E. Sherman, Minnewawa Vineyard, Fresno, Calif.

Buy Does Bred to "Andreas Hofer" due February, March. Black Tog. Saanen grade, hornless, wattled, $30; Red doe, fine dairy type, beautiful hare-like ears, $20; and others. R. M. Cartwright, 1353 Palm St., San Luis Obispo, Cal.

Fistula, Poll Evil, Quittor and all running sores cured permanently by a recent discovery of medical science. Write for particulars. Dr. Fred G. Matthews, Veterinary Bacteriologist, 1232 Central Ave., Los Angeles.

For Sale—Scotch Collie, male, 10 months; won 3 ribbons at the recent show. Mrs. C. L. McCleery, Whittier, Cal. Home phone 152.

A few young White Hornless Swiss Saanen Grade Milch Goats for sale. Mrs. E. Banta, Calistoga, Cal.

Registered Shorthorn Bulls and Poland China Hogs for sale. Best breeding. P. H. Murphy, Perkins, Cal.

WANTED.

Wanted—Four or five hundred two or three-year-old seedling grape fruit trees, first class, grown from straight seedlings seeds (not budded seedlings seeds), three-quarters to one inch in diameter, 2½ to 3 feet high; must be growing in the nursery and never budded, clean and free from scales. State price. E. S. Lewis, Ontario, Cal.

Wanted—Your work pays the expense to learn a trade that pays $5 a day, in a few months' time; electricity, automobiles, plumbing, bricklaying; actual contract jobs; 200 students last year. United Trade School Contracting Company, 647 Pacific Electric Bldg., Los Angeles, Cal.

Help Wanted—We want several good solicitors to solicit for a high class suburban monthly publication. Good profitable employment to the right party. For particulars address Box H, Cultivator Office, Los Angeles

Wanted to Lease—Good dairy ranch with cows, alfalfa, water and dairy appurtenances. Best of references. Address Box G, care Cultivator.

Wanted—Ten-acre orange or lemon grove, San Dimas, Charter Oak or La Verne, for client, from owners only. Must be first class and great bargain. W. D. Robinson, San Dimas, Cal. R. F. D. A 35.

Wanted—To purchase windmill or small engine and tank, also irrigating pipe. Rogers, 120 Winston street, Los Angeles.

Wanted—From one to three thousand acres of land. Wm. Paramore, Hollywood, Cal.

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Ornamental Eucalyptus—Cleanest and best shade trees for the ranch. Acacias, pines, etc. Large stock. Ballou's Nursery, 728 East Orange Grove Ave., Pasadena, Cal.

Write for Special Price on peach trees and French prune trees, on Myrobolan root. Gridley Colony Nursery, Gridley, Cal.

Marsh Seedless Grapefruit—600 large trees for sale. E. S. Thacher, Nordhoff, Cal.

Black Walnut Selected Trees—One and two years old, 2 to 8 feet high. Also seedling peach trees, good stock, and Maliner Keen Horseradish sets. A. P. Henning, Clements, San Joaquin Co., Cal.

For First-Class Valencia and Navel Orange trees and Eureka lemons, see A. G. Snow, Oxnard, Cal

Fine Line of Navels—Valencias and Eureka lemons for delivery spring of 1911. Contract now and get the first choice. The King Citrus Nurseries, Whittier, Cal.

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For Sale—At a price that will move them; 50 Poinsettias (in gal.) at $12.50; 200 Acacia Melanoxylon, in 4-inch pots, $15.00; 200 Acacia Melanoxylon, in gal., $35.00; 200 palms Phoenix Canariensis, in gal., 2 years, $30.00; 200 palms Phoenix Canariensis, 2 feet, balled, $45.00; 200 Guavas Strawberries), in 4-inch pots, $15.00; 200 Guavas (Strawberries), in gal., 35.00; 150 large and very fine pines, 10 to 12 feet, $150.00. These prices are only good for lots as stated above. Address H. L. Bauer & Son, 737 S. Spring st., Los Angeles, Cal.

Having bought our seed of Luther Burbank, who guaranteed it selected seed, mostly from Giant Crimson Winter Rhubarb, we feel in shape to offer choice Crimson Winter Rhubarb plants for this year's planting at reasonable figures. Write for particulars. B. B. Currier, Sea Bright, Cal.

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Our Descriptive Price List No. 2 contains all novelties exhibited at the Pasadena Flower Show, also other new introductions by Dr. Franceschi; mailed free on application. Montarioso Nursery, Box 1500, Santa Barbara, Cal.

Improved Superlative Red Raspberry Plants—Largest raspberry in cultivation. 100 plants, $5.00. Send for description. William Richard, 438 River St., Santa Cruz, Cal.

RARE PLANTS.

Wild Plant Improvement Gardens, Santa Ana, California. Newton B. Pierce, proprietor. Rare choice ornamentals and new fruits from all lands

For Sale—Fine stock plants of Yellow Major Bonnaffon Chrysanthemums at 50c per dozen, $3 per 100. Also other varieties. Langley J. Goodman, R. F. D. No. 1, Box 22, Los Angeles, Cal.

Ahuacates, Alligator Pears (Persea Gratissima). Fresh Mexican seeds, none better for stock; $4.50 per 100 seeds; $40.00 per 1000 seeds. Montarioso Nursery, Box 1500, Santa Barbara, Cal.

FARM LANDS FOR SALE.

For Sale—A 20-acre farm for $20 cash and $20 a month; possession now; $90 to $125 per acre; your crops pay for the land. Rich, level land for alfalfa, oranges, almonds, grapes, cows, chickens; abundance of ditch water, for irrigation, for $1 an acre a year. Where else can you get this? In Oakdale Colony, near good town and railroad station, climate delightful. T. Wiesendanger, 207 S. Broadway, Los Angeles, Cal.

For Sale—815 acres in San Luis Obispo County. A typical dairy ranch. Plenty of wood, water, irrigable land, buildings, fenced and cross fenced. Orchards, vineyards, oranges, lemons and walnuts do exceedingly well here. Forty acres of land suitable for these. Price $21 per acre. For further particulars apply to Mrs. F. A. Clink, Pozo, Cal.

Tulare County—652 acres at $42.00 per acre. Good terms. One-third mile from switch and flag station, main line S. P., 2 miles from town and school. Over 600 acres of this, the very best, level alfalfa land. Unlimited pumping water at shallow depth, besides artesian water deeper. Electric power line near. Fine for subdivision. C. H. Biggin, Pixley, Cal.

For Sale—Eighty acres finest Eucalyptus land, 4 miles from Santa Maria, Santa Barbara County, 1½ miles from railroad station, $30 per acre. Apply to A. Frederiksen, Arroyo Grande, Cal.

For Sale—An ideal poultry ranch and mountain home, 33 acres, 3 miles from Aptos and seashore. Fine fruit land; family orchard, splendid timber grove, accommodations for 1000 chickens; best water and climate; school close by. L. Pedersen, Aptos, Cal.

Irrigated Land—The famous Gridley Colonies. Improved lands, best homeseekers' proposition in California. Write for particulars. Gridley Land Co., Gridley, Cal.

For Sale—El Cajon Grant Land. Virgin soil, 4 miles to railroad, good farm land at $30 to $60 per acre. S. B. Hawley, 1548 D St., San Diego, Cal.

The Best Buys in farm lands in Central California can be had through us. Call or write Sterling Securities Co., Savings & Loan Bldg., Stockton, Cal.

Cuba—Most productive soil. Delightful and healthful climate. Ample rainfall. Cheapest transportation facilities to the world's greatest markets. Particulars free. Sanderson, 13 Palace Building, Minneapolis.

Apple Orchards—Large and small, in the only apple producing section in California. The greatest section west of Missouri River. Write for booklet. Geo. W. Sill & Co., Watsonville, Cal.

For Sale—Ten acres in three-year-old Santa Barbara soft shell walnuts, within Chino city limits. J. Lenert (owner), Chino, Cal.

For Sale—Or exchange for Northern California land, 20 acres Orange County improved. W. C. Showalter, Santa Ana, Cal.

MACHINERY

For Sale—Second-hand windmills, tanks, engines, farm machinery that will do same work as new at half price. 140 ft. 2½-inch standard at 9½c; 1600 ft. 2-inch at 7c. 8 ft. steel aeromotor windmill complete with tank and pump, $48. Small distillate tanks, 50 gallons up. Domestic and irrigating tanks, galvanized and 500 to 10,000 gallons, also 50,000-gallon tank, fine for storage. Steam engines with steam pumps; gasoline engines, 4 h. p. engine, pump jack, pipe, pump complete, $98 F. O. B., also many other sizes. 12 h. p. Fairbanks engine, No. 2 deep well Ames double-acting pump jack, 65 ft. casing, rods, and double-acting cylinder, 50 ft. belt, price $380 on cars if taken before we have to move it. Gang, disc, road, riding, walking plows, feed rack, bone grinder, Fresno and slip scrapers, wagons, surrey, grading tools, sundries. Demmitt Co., upstairs, 120 N. Main, Los Angeles.

For Sale—25 h. p. Fairbanks-Morse engine. Got this a few days ago. Repairs needed were few. Condition now excellent. Our customary guarantee given. Bailie & Brandt Company, 943 and 945 N. Main street, Los Angeles, Cal.

For Sale—A good portable drilling rig, good for 800 ft., complete string of tools. About half its value, at $750.00. Address M. H. Magie, 1242 Harvard Blvd., Los Angeles, Cal.

For Sale—9 and 15 h. p. Foos Distillate engines. Will install if desired. Machinery Exchange, Main and Bruno streets, Los Angeles, Cal.

For Sale—Second-hand ranch wagon with bed and 4-ton springs. W. D. Robinson, San Dimas, Cal. R. F. D. A 35.

For Sale—One No. 3 Ames pump, 125 ft. of rods, 8 inch cylinder, also one 22 H. P. Fairbanks-Morse engine. All for $1,000.00. 1½ miles north of Olive, ¾ mile south of Richfield. J. H. Gulick, Olive, Cal.

TURKEYS.

For Sale—Thoroughbred Bronze Turkeys from 38 to 40 lb. Toms, and 15 and 20 lb. Hens. Young Toms $5.00 to $7.00, young hens, $3.50 to $4.00. Pairs and trios not related. Mrs. P. E. Tucker, Tulare, Cal., R. D. 1.

Mammoth Bronze Turkey Toms, spring hatch, from Howard strain. Could not supply the demand last year; a word to the wise is sufficient. Also pedigreed female Scotch collie pups. Mrs. A. C. Wisegarver, San Fernando, Cal.

Bronze Turkeys for sale. Good stock at $3 to $4 each. L. Haynes, Madera, Cal.

REAL ESTATE.

Income city property from $50 to $500 per month for ranch or acreage, equal value. Submit details, description. Parrish Barker, 207 Union Trust Bldg., Los Angeles, Cal.

BELGIAN HARES.

For Sale—Choice Belgian Hares. Thoroughbred stock, 50c up. Write for prices. J. K. Pierce, R. F. D. No. 2, Box 15, Petaluma, Cal.

LAND FOR RENT.

To Lease for term of years, 17 acres alfalfa land, pumping plant, reservoir, all in first class order; within city limits of Chino. Will make good truck farm. J. Lenert (owner), Chino, Cal.

POULTRY.

How to Make Money—Mrs. A. Basley's New Poultry Book is just out. It is without exception the most wonderfully complete manual on the subject of successful poultry management ever written. The secret of how to raise every turkey hatched and the "Basley Formulas," now published for the first time, are worth many times the price of the book. The "Western Poultry Book" is a practical book by a practical woman Price $1.00. Address Mrs. A. Basley, Box 77, Venice, Cal.

Lone Oak Poultry Farm—Breeder of prize birds at Sacramento and three county fairs. White Rocks, White Minorcas, Partridge Wyandottes, White Cochin and Light Brahmas, Bantams, Pekin and Rouen Ducks, all kinds; fancy pigeons and S. S. Hamburgs. Received first prize Rouen Drake and also Pekin Drake of A. Y. P. E. to head my flock of ducks. Get your orders in early. First come, first served. B. P. Shirk, Route 1, Box 4, Hanford, Cal.

Hayes, R. B., Poultry Fancier and Rhode Island Red Specialist—30 breeding pens of Reds, 20 pens miscellaneous varieties. See our birds, they tell their own story, or write for circular. Eggs for sale only. Yards in Arroyo, opposite Ostrich Farm. Box 35, Garvanza Sta., Los Angeles, Cal. Phone East 1631.

LOVELL'S BLACK MINORCAS
California's
Greatest Egg Producers

Pedigreed, trapnested, scientifically bred Free circular. DAVID J. LOVELL, 5720 So Park Ave., Los Angeles, Cal.

Day-old Chicks from my pure bred and carefully selected stock of S. C. White Leghorns from January 15 to February 15, $10 per 100; after February 15th, $9 per 100. Spring orders taken now. J. R. Heinrich Poultry Yards, Arroyo Grande, Cal., San Luis Obispo County.

Columbian Wyandottes—Pedigreed winter layers. Bred for five years from best blood in United States. Eggs, $3 and $5 per 15, stock matter of correspondence. A. H. Memmler, Monrovia car to El Nogal, ½ mile south. Home phone, Alhambra 2064; address, San Gabriel, Cal., Box 299.

Magnolia Poultry Farm—S. C. White Leghorns (Wyckhoff stock). Vigorous, healthy birds, good layers, large, white eggs. Eggs, $2.00 per 15; $3.00 per 30; $7.50 per 100; $60.00 per 1,000. C. H. Hosford, 351 Magnolia ave., Riverside, Cal.

Eggs for Hatching—Black Minorcas, Barred Plymouth Rocks, Rhode Island Reds and Buff Orpingtons, $1.00 per 15, $5.00 per 100; day old chicks 15c each. Cockerels $2.50 and $3.50. Stamped envelope for reply or cash with order. (No more pullets). L. W. Neilsen, R. R. 2, Box A1, Petaluma, Cal.

Schellville Hatchery—Thoroughbred Leghorns, Black Minorcas, R. I. Reds and Barred Plymouth Rock chicks hatched from heavy layers. Strong chicks and safe delivery guaranteed. Sonoma, Cal.

White Orpingtons—Finest utility stock on coast. Heavy layers. Eggs $5.00 per setting of 15; $25 per 100; baby chicks, 50c each. H. E. Dickinson, R. F. D. 1, Napa, Cal.

A few of those Black Minorca cockerels left, large strong fellows. Just the kind to improve your flock. Correspondence solicited. R. G. Page, 1227 West 10th st., Los Angeles. Phone Broadway 5594.

Booking orders for day-old chicks at 12c for January delivery and later. White Leghorn eggs at $2.50 per setting, $6.00 per 100. Sussex Poultry Manor, Los Gatos, Cal.

BONNELL'S S. C. BLACK MINORCAS
WIN EVERY TIME.

A few cockerels for sale. C. C. Bonnell State Vice-President American Black Minorca Club, 2919 Brighton Ave., Los Angeles

I Hatch White Rocks Exclusively—Chicks $15 per 100 from a heavy laying strain of prize winners. I am booking orders now for later delivery. Can supply stock from 1 to 10 weeks old. Write for prices. J. Wesley Lord, Inglewood, Cal.

Petaluma Hatchery—Capacity 50,000 eggs. We are booking orders for spring. Write for circular. L. W. Clark, 615 Main St., Petaluma, Cal.

For Sale—White and Buff Wyandottes from best strains. W. C. Parker, 113 Pacific Ave., Santa Cruz, Cal.

Lodi Hatchery—Just hatched, White Leghorn chicks from healthy, heavy laying stock. Booking orders for later delivery. T. C. Hawley, 504 E. Elm St., Lodi, Cal.

Single Comb Brown Leghorn Eggs—$5.00 per hundred, $1.50 single setting. **Mrs** E. Foran, Box 445, Visalia, Cal.

Poultry Wanted—We pay the highest market price for all the local poultry we can get, no matter how large the quantity; also fresh ranch eggs. We remit immediately Allaway & Layton Co., 607 E. 3d St., Los Angeles, Cal.

Pacific Hatchery—Baby chicks, incubator eggs, and selected thoroughbred poultry, ranch raised. W. W. Clough, Ontario, Cal.

Orland Hatchery—Just hatched White Leghorn Chix. Booking orders for later delivery. P. L. Simpson, Box 13, Orland, Cal.

Baby Chicks and Eggs for Hatching—Orders now taken for January and later delivery of R. I. Reds (Tompkins Strain), White Minorcas and S. C. Black Minorcas (Northrup Strain). C. U. Chamberlin, Los Gatos, Cal.

FOR THE HOME.

Raisins—Recleaned, ready for use, Thompson Seedless Raisins, absolutely free from all stems and dirt. Cleaned by machinery. Housewives' delight. Better than candy for the children. Nature's own health food. Drop us postal for sample, or send $3.00 for 50-pound box. Fowler Fruit Co., Fowler, Cal.

ASPARAGUS PLANTS.

Bonvalliets Giant, new Chicago variety, $5.00 per 1,000; Palmetto, $4.00 per 1,000. Plant early. Deciduous fruit trees in dormant bud, $5.00 per 100; will pack light. D. Turner, Phoenix, Arizona.

HORTICULTURAL PRINTING.

The Kruckeberg Press, 123 South Los Angeles St., Los Angeles, Cal., makes a specialty of Horticultural Printing and Engraving. Cuts and illustrations of all standard, economic and ornamental plants on hand and subject to the use of patrons without cost. Samples and estimates cheerfully furnished. Remember, we design, write, engrave, bind and print; in brief, do the "whole thing," at no additional expense to the customer. Correspondence a pleasure.

DAIRY SUPPLIES.

Have You a Cow?—Have you a creamery? Have you a cheese factory? Write us. Everything used in either a dairy, creamery, cheese factory, or for handling milk, cream, butter, or cheese. We are in a position to quote you prices on entire creamery or cheese-making outfits. We make a specialty of only the latest and best sanitary machinery and supplies. Send us a list of what you want and we will quote prices which we feel certain will interest you. O. J. Weber Co., 225-227 East Sixth St., Los Angeles, Cal.

Milk Coolers, Bottles, Caps, brushes, Buhl milk cans, Sharples separators, Babcock testers, veterinary instruments, wood soled boots and shoes, and our celebrated "Prosperity" washing powder. Guy F. Kelsey, 108 E. 8th St., Los Angeles, Cal.

Business Notes

MAGNIFICENT. AGRICULTURAL LAND.

After fourteen months of preparation, in the adjustment of titles, survey and the many things necessary to prepare a Mexican property for sale to American farmers, we are now ready to open an allotment of 16,000 acres.

Approximately twenty miles southwest from the city of Hermosillo, the Capital of the State of Sonora, and on the Sonora Delta at a point where the Sonora and Pozo rivers come within a short distance of each other. Forty miles inland from the coast of the Gulf of California and in a direct line with the concession granted the Torres and Minas Prietas Railway to be built from Torres, a station on the Southern Pacific to Kino Bay on the Gulf.

The home ranch of the Santa Teresa de La Concordia consists of 16,000 acres of all level land which is divided into sections of 640 acres each and these are quartered where desired.

A little more than 6000 acres is bottom land which can be flooded from the Pozo River. This land is being sold on choice at $10 per acre, easy terms. More than 2000 acres are cleared and are the corn, bean and cotton fields on the ranch. They still have some of the fences, ditches and headgates and the same facilities for farming which existed before the Yaqui warfare.

The remaining 10,000 acres is also bottom land with the same rich soil, but lies a trifle higher and farther from the river. This is being sold at $5.00 per acre, which allows $5.00 with which to build ditches, represses, etc. The price of the $5.00 land will be raised after all of the $10.00 land has been sold.

Land of this class is scarce in any country and will double in value very quickly, and continue to increase in value.

A great deal of land in the United States, where the soil, climate and water conditions are not so good, is selling at from ten to twenty times the price.

With cheap labor, ideal climate and the excellent market conditions the chances for large profits to the producer are much better in Mexico than in the United States and the quick increase in the selling value of the lands will be far greater than is now possible in this country.

There are the same opportunities in Sonora today that existed in Southern California a few years ago.

The City of Hermosillo is a larger and better town now than was Los Angeles twenty-five years ago.

The present water conditions and the chances for developing water are better than existed in Southern California at the same stage of development.

Parties will leave Los Angeles at least once a week. One way fare is $28.40. The round trip with our parties is $37.90. sixty-day tickets. Train leaves at 7 P. M. and arrives at Hermosillo 4 A. M. the second morning. See Ben W. McCloskey & Co., 700 Union Trust Building, Los Angeles.

SPEEDY MAXWELLS.

Thanksgiving Day witnessed a great race with racers and fast road machines on the eight mile road course at Santa Monica, Los Angeles county. The American record was broken and more than 74 miles averaged per mile for the the 101 mile race. Even the light car race showed some wonderful speed, the pace set by the winner being so fierce that it was the only car to finish the 101 miles. The time made was one hour, 42 minutes and 32 seconds. The winner was a Maxwell. We assume that few Cultivator readers will have need of such speed, but pride in the ownership in such a machine is worth consideration when purchasing. The Maxwell is an all around magnificently built machine for every day use. With it all it is now claimed that it is cheaper to use than the horse and buggy. Feed is an expensive item; the automobile does not need it.—Full particulars of this machine may be had by writing the Maxwell-Briscoe Manufacturing Co., Pery St., Tarrytown, New York, and we doubt not an interesting illustrated booklet will be mailed for the asking.

Household Department

PA'S BOY.

When pa was just a little boy,
  Gee, how he ust to work,
He sawed the wood an' built the fires
  An' never tried to shirk.
He always filled the reservoy
  And swept the porches, too;
N' I guess there wasn't many things
  Pa didn't ust to do.

Now ma gets up and builds the fires;
  She says I am too small—
An' sweeps the porches an' the walks
  An' doesn't mind at all.
She says she's glad to let my pa
  His morning nap enjoy,
Because he's tired with all the work
  He done when he's a boy.

When I get big I'll get a wife
  Edzactly like my ma;
To do the chores an' let me sleep
  Just like she does my pa.
An' when I've had my mornin' nap
  You bet that I'll enjoy
To tell 'em how I ust to work
  When I's a little boy.

—Elizabeth Clarke Hardy, in Wisconsin Agriculturalist.

THE RESOURCEFULNESS OF SUE.

Sue was a typewriter and Ethelinda sold lovely laces in a big shop. They lived in an apartment that had plenty of closet room—five rooms and bath, to be exact. Sue usually stopped on the way home and bought two lamb chops and a head of lettuce, if it was the beginning of the week, or five cents' worth of stew meat and no lettuce, if it was toward the tag end of the week, near pay day. Sue was generally the one to negotiate the purchases because she left the office at five and came up town on an express train, while Ethelinla's shop didn't close until six.

Now, upon a certain evening they had invited Marie and Ralph to dine with them. They could say "dine" because they intended to turn in the necks of their shirt waists and wear their near-Brussels lace collars and because Marie was going to bring over her finger bowls. It behooved Sue to shut up her typewriter on the very stroke of five, therefore, even if the manager passed her the glance frappee, and make all possible speed to the express train.

She had the list of dinner items complete. Chops, bread, lettuce (oh, this was Monday evening), corn on the ear, a meringue pie and some berries for desert. She looked like the Goddess of Plenty as she reached the door of the flat house.

She had to put down the chops, the bread and the lettuce on the floor of the vestibule while she dug in her bag for the keys.

Keys? Keys? Here was her penknife, her handkerchief, a pencil, three hairpins, some chewing gum, a powder puff, a nail file, a mirror and her list of dinner supplies—but no keys. Clearly she must have left them at the office in her hurry. Now, here was indeed a pretty how-de-do!

Ethelinda wasn't due for an hour, the guests were apt to come along any minute, and she had ordered the grocer to send around the four bottles of "ice cold" right straight away, and now she couldn't even get in to open the dumbwaiter door.

It was comparatively easy to collect the pie, the chops, the bread, the lettuce and the berries and go down through the cellar and up the four flights of stairs to her apartment door. But then what? She sat down on the stairs and thought some more. There were two flats on a floor. She could ring the bell of the next-door lady and beg to let her climb out her kitchen window, across the fire escape and into her own kitchen window. Fine! Whereupon she rang. No answer. Lady away. Lovely! Now what? And time was flying. There was but one other way. The flat just over theirs was vacant. She might get into that if the door was open, go out the kitchen window, and down the fire escape to her own.

She carefully deposited the chops, the berries, the corn, the lettuce, the pie and the bread upon the floor and started upstairs. The door of the empty flat was unlocked. Ah, joy! She rushed to the kitchen window and gazed down through the fretwork of the fire-escape to the street. My! It was a long drop if she slipped. Furthermore, the ladder was a rusty old thing, and as the flat house was at the corner of the block, the fire escape hung to the outer wall of the building. The openings in the iron platforms at each floor were right over each other, and offered a clear drop, if anything happened, straight to the areaway. She hoped she'd fall nice and plumb into the area, and not out on the sidewalk, where everybody passing by would have to see her all mussed up.

She stepped forth courageously, desperately, and put her foot on the iron ladder. It seemed firm. She tried not to look down in the street, but she couldn't help noticing a man driving a sprinkling cart. He gazed up in her direction and shouted, pleasantly: "Oh, I say, Maude, the water's fine. Drop in!"

Two small boys playing ball in the street yelled at a companion a block away: "Hey, Chimmie hurry up! Pipe de lady burglar!"

"Oh, you blue stocking," remarked a college youth from across the way. And two men who were repairing the street stopped their steam roller and called out: "Don't jump! We'll save you!"

The ladies in the tenement opposite nearly fell out of their respective windows in their enthusiasm over the unusual spectacle. The grocery boy from the corner store dropped a barrel of potatoes on the grocer's foot, the driver of a delivery wagon paused with his parcels slipping from his arms—and all because a desperate young person was descending a fire escape. It seemed to Sue to take an hour at least to get to the platform outside her own kitchen window. Her hands and dress were red with rust, and her hat was on one ear. She ducked hastily into the open kitchen window with a triumphant cry—into the arms of the amazed Ethelinda.

"Sue!"

"Ethelinda!"

"You frightened me nearly to death! What on earth—"

"I'm not on earth. I'm in the air. What are you doing home at this hour, Ethelinda?"

"Why, the store has begun closing at five. I thought I'd hurry home and help you get dinner."

Some young men are foolish enough to spend their money just to convince somebody that they have it.

THE BEST
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THE LARGER YOUTH'S COMPANION offers an unusual investment in "only the best" reading for every week in 1911—300 Brilliant Stories; Popular Papers by Famous Contributors; Splendid Serial and Adventure Stories the Year Round; 2000 Bits of Wisdom, Wit and Humor.

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1911 Art Calendar Free

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EVERY NEW SUBSCRIBER who at once cuts out and sends this slip (or the name of this publication) with $1.75 for the 52 issues of The Youth's Companion, will receive Free SD 198
ALL THE ISSUES for the Remaining Weeks of 1910, including the Thanksgiving and Christmas Holiday Numbers; also Free
THE COMPANION ART CALENDAR for 1911, lithographed in 12 colors and gold—an extra copy being sent to every one making a gift of a Christmas subscription.
THEN THE YOUTH'S COMPANION for the 52 weeks of 1911, reading equivalent to twenty-seven 300-page volumes of romance, adventure, science, travel, etc., costing ordinarily $1.50 each.

THE YOUTH'S COMPANION, BOSTON, MASS.

ENTERPRISE

Meat and Food Chopper

The *only true Meat Chopper*—the only chopper that has a sharp, four-bladed steel knife and perforated steel plate that *actually cuts* meat, fish, vegetables, fruits, bread, etc, *without crushing or mangling.*

The "ENTERPRISE" is the strongest chopper made—has the fewest parts—is the simplest in construction. Easily cleaned. Cannot rust.

For Sale at Hardware and General Stores Everywhere.

No. 5, Small Family Size Chopper, $2.00. No 10 Large Family Size Chopper, price, $2 75.

"ENTERPRISE" Meat and Food Choppers are made in 45 sizes and styles for Hand, Steam and Electric Power. We also make *cheaper* Food Choppers, but recommend the above. *Illustrated catalogue FREE.*

Sausage Stuffer and Lard Press

The quickest way, the easiest way, the cheapest way to make the best sausage and lard is to use the "ENTERPRISE" Sausage Stuffer and Lard Press—two machines in one. It is an absolute necessity at butchering time.

It is strongly made and every part does its work without a hitch. Plate fits perfectly and cylinder is bored absolutely true. Pressure will not cause meat to rise above plate. The patent corrugated spout prevents air entering the casing, thus assuring perfect filling and preservation of sausage.

Can be changed into a *Lard* or *Fruit Press* in a jiffy.

Sold by Hardware Dealers and General Stores everywhere.

Write for catalogue.

Bone, Shell and Corn Mill

A necessity to farmers, poultrymen and all who keep poultry. A splendid general, all-round mill. Grinds poultry feed and makes bone meal fertilizer.

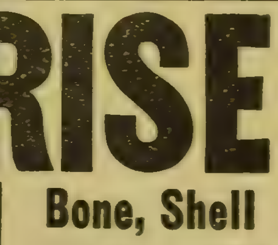
Grinds dry bones, oyster and other shells, corn, etc. Pays for itself in a short time. Size shown in illustration (No. 750, Price $9.50, weight 60 lbs.) grinds 1½ bushels corn per hour.

Look for the name "ENTERPRISE" *on the machine you buy.*

We also make other household specialties—all bearing the famous name "ENTERPRISE"—Coffee Mills, Raisin Seeders; Food Choppers; Fruit, Wine and Jelly Presses; Cherry Stoners; Cold Handle Sad Irons, etc., etc.

Ask for them at Hardware and General Stores.

Illustrated catalogue on request.



The "Enterprising Housekeeper" is a valuable book containing over 200 selected recipes as well as numerous kitchen helps. Sent anywhere for four cents in stamps.

THE ENTERPRISE MFG. CO. OF PA., Dept. 61 Philadelphia, Pa.

Mayer WORK SHOES
BUILT ON HONOR

Mayer Work Shoes are made to meet the demand of all classes of working men. They are made solid and are absolutely dependable under all conditions. They fit good and look good and will outwear other work shoes at the same price because they are made of specially selected tough, seasoned stock, choice uppers, heavy soles, solid counters, double leather toes and double rows of stitching.

The Genuine have the Mayer Trade Mark stamped on the sole. If your dealer will not supply you, write to us.

We also make *Honorbilt* Shoes for Men, *Leading Lady* Shoes, *Martha Washington* Comfort Shoes, *Yerma* Cushion Shoes and *Special Merit* School Shoes.

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WESTERN BRANCH: Washington Shoe Mfg. Co.—Seattle, Wash

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AVERY THIRTY H. P. UNDERMOUNTED
OIL-BURNING STEAM
TRACTION ENGINE
☞ FOR SALE CHEAP

⁂

This Engine is equipped with all approved time and labor-saving devices. It has been slightly used for experimental work only and is warranted to be in first-class condition.

AVERY COCKSHUTT PLOW—ten 14-inch steel bases, especially for this engine—will be sold cheap. It is brand new—has never been used. The Cockshutt Plow has won first prize at all international plowing contests for the last three years.

Both Engine and Plow will be sold below factory cost, and we will be glad to mail you full description and prices. This is a real opportunity to buy a first-class outfit at big saving over the cost of inferior goods.

⁂

Newell Mathews Company
200 North Los Angeles St. LOS ANGELES, CAL.

RECIPES.

From various exchanges we pick up the folowing. They look good, try them and report.

Fig Sandwiches.

Chop one-fourth pound of figs very fine, add one-fourth cupful of water, and cook to a smooth paste; add also one-third cupful of almonds, blanched, chopped fine and pounded to a paste, with the juice of half a lemon. When cold, spread the mixture upon lady fingers or small cakes. Raisins or dates may be used in place of figs, and bread may be used in place of the cake.—Country Gentleman.

Split Pea Soup.

Wash and soak over night one cupful of split peas; cook till tender, then put through sieve; return to water in which they were cooked. Dice fine one-fourth pound of bacon. Fry slightly, but do not brown. Add to the peas with one teaspoonful of salt and one-fourth teaspoonful of white pepper. Cook twenty minutes; add water until about one quart and a half; add one cupful of milk. Bring to a boil and serve.—San Francisco Call.

Egg Pudding.

Put one quart of milk in a double boiler and let come to boil; mix nine tablespoonfuls of flour with one pint of cold milk and stir into the boiling milk, and let remain on fire until well cooked. Beat the yelks of one dozen eggs, six tablespoonfuls of sugar and three of melted butter. Take boiler from fire, stir in the eggs, sugar, etc.; beat the whites of the eggs and stir in. Butter a pudding dish, pour in the mixture, set the dish in a pan of hot water and bake one hour in a moderately hot oven. Serve with lemon sauce.—Physical Culture.

Chicken Gumbo.

Fry a young chicken brown, and boil one pint of okra fifteen minutes, adding after the first ten minutes four ears of corn, cutting the kernels from the cob, but cooking the cobs with the okra, in order to get their juices. Put the chicken in a porcelain-lined pot, adding corn, okra, four large tomatoes, peeled and sliced, one pod of sweet, red pepper, and a cupful of thickened gravy. Add a pint of boiling water and cook gently for an hour. Take out the chicken bones, strain, then add a quart of rich milk, a pint of fine white bread-crumbs, a large cupful of the chicken breast finely chopped, and, if desired extra good, one cupful of blanched almonds ground fine. Bring quickly to a boil, stirring frequently, and serve at once. —Bridgeport Republican.

Grape Sherbet.

Mix together a quart of grape juice, two cupfuls of orange juice and two cupfuls of sugar. When the sugar is all dissolved, turn into a freezer and freeze. When half frozen, take out the dasher and mix well in the beaten whites of two eggs. Pack and set away to harden.—Greenfield Gazette.

USES OF THE LEMON.

Few people realize the many uses the lemon can be put to.

As a hair wash and tonic it has no rival. For the former purpose a large, juicy lemon should be cut in half, the head dipped in a bowl of water, from which the chill only must be removed and the water made the same temperature as the air, and the lemon rubbed and squeezed vigorously among the roots and along the length of the hair. Soak and rub the hai well in this bath, and then rinse tho oughly in fresh water of the sam warmth. If well dried at once wit energetic toweling, there will not b the smallest danger of cold. No soa is needed.

The acid of the lemon absolutely r moves all grease and dust, and th hair after such a bath is soft, gloss and clean. This lemon bath once week will have the most benefici effect on the hair, stimulating i growth, delaying the coming of gra ness and making it beautifully pliab and polished.

For manicuring the lemon is ab lutely indispensable. A teaspoonf of the juice in a cupful of tepid wate whitens and supples the nails and r moves all grease and dirt, makin them much more easy to polish. Thi should be used every morning, and b dabbling the fingers a few moment it is possible to make the nails pe fectly clean and transparent, withou the use of a cleaner, by simply ru bing them with a towel.

It is also most beneficial in remo ing the skin around the nail edge which should never by any chance b cut with scissors. Rub the tow firmly all about the nail, pushin back the skin; do this regularly ever day, and after a few weeks the ski growth will disappear and never r turn as long as treatment is co tinued.

Women with faultless skin say the have never used anything else. The keep a bottle of lemon and glycerin with them as they do their toile articles and it is rubbed in the ski every night after the face has bee made thoroughly clean.

One should be careful to get th best glycerine and have it well d luted with rose water. This gives i just enough perfume. Neither of thes liquids will cause a growth of hair o the face, and if lemon juice is adde it will whiten the skin as well a prove an antiseptic.

Too much lemon juice is dryin and hardening, and only a few drop are needed to a half pint of the gly cerine and rose water.

HOMELY HINTS.

When the machine has been used fo mincing rather fat meat, run a crus of dry bread through it. This wil remove a good deal of the grease, bu the mincer should afterward be wel washed and scoured.

A piece of camphor kept with the silver which is not in constant use will keep it from tarnishing.

Do not keep fresh meat in paper, it absorbs the juices. Put it on a plate or other dish and place it as soon as possible in the refrigerator, keeping it there until needed.

When steaming a pudding put it into a cake mold that will fit the steamer, instead of tying it in a cloth. The pudding will be lighter if this is done.

All escalloped dishes are better if made with a good white sauce poured over them instead of the usual way of pouring milk over them and sprinkling with bits of butter.

Instead of using oxalic acid to clean brass and coper utensils try half a lemon dipped in salt. This will cleanse and brighten wonderfully, but should be polished until thoroughly dry before putting the article away.

If a double layer of brown paper is put under oil-cloth on shelves or table it will wear three times as long as if laid directly on wood.

To rub off paint from window glass,

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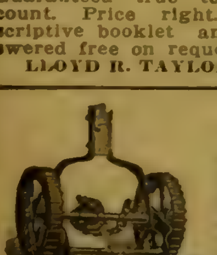

THE CLIPPER
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Clipper Lawn Mower Co
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Placentia Perfection Walnuts
Grafted on California Black
Eucalyptus Trees and Seed
Sunset Nurseries, Tropico, Cal.

dip a penny or other coin in cold water, and then, with its edge, scrape off paint from the glass.

Stains on china can be removed by rubbing with salt or powdered bathbrick. These remedies can also be used for cleaning an enameled saucepan that is stained or burnt.

A good clock is a necessity in any kitchen; without it one is apt to have meals a trifle late, and there are countless reasons why a good clock should be found in the kitchen if anywhere in the house.

When starching anything which has a frayed edge, fold the article in four, and gather the fringe tightly into one hand; hold it firmly and dip the center of the piece into the starch. When dry, shake the fringe well and comb carefully with a coarse comb.

White spots upon varnished furniture will disappear if you hold a hot plate from the stove over them.

A simple polish for furniture is boiled linseed oil. The oil should be boiled the day before it is needed, as it must be entirely cold when used.

If the coarse salt and chopped ice needed to freeze ice cream are mixed together in a separate vessel and the mixture then packed around the freezer can, the contents of the latter will freeze much more evenly. The proportion should be one-third salt to two-thirds ice.

Rice water for invalids is made by boiling one tablespoonful of well washed rice in one pint of water. Strain and add sugar or salt to taste.

Always wrap table or bed linen or any other article of white goods, for that matter, which is to be stored away, in dark blue paper to keep it from turning yellow.

One of the chief reasons why so-called "clear" soup is often cloudy is because every trace of fat has not been removed from the stock. Allow the stock to become cold and solid, then remove all the grease.

THE HOMESICK COLLIE.

Emerson said, "In dealing with children as much soul as you have avails." This is true in treating with domestic animals, especially dogs. Here is an example which tells me so.

I saw a traveler at a railroad station leading a beautiful Scotch collie with a chain around its neck. He told me that the dog was eleven months of age, was born and raised on a farm in southern Indiana, and that he had bought it and was taking it to eastern Pennsylvania.

"But," said he, "I am worried about him. We have been on the road a day and night and I can't make him eat."

He bought at the lunch-counter a few slices of bread with milk poured over them and took them on a wooden picnic plate outside to see if he could coax "John" to eat. But the dog turned his head away and looked wistfully out of the station shed down the shining steel rails. Then it was that I thought of Emerson's remark, and I asked if I could try to induce the animal to eat. The privilege was granted, and I squatted and called,

"John, come here, I want to talk with you."

John came over and laid his head up near my face, and I said,

"Poor boy! I know your trouble. You are so homesick. You want to see the cows and the children, don't you?"

He put his head on one side and seemed to be drinking in every word. His eyes were deep and soulful.

"I know just how you feel, for there have been times when I wanted to see the cows, the green fields, and the children. And then the sights and sounds are all so strange to you, John. You feel as queer and lost as a child would who had been taken away from home, don't you? But, dear, you must eat, for you have a long, long journey before you. Come on over there with me and I'll feed you."

And so he followed me and ate the whole supper from my hands. As I looked up I saw there were men around us with tears on their faces. —Dumb Animals.

THE WORLD'S BEST SELLER.

"Six million six hundred and twenty-four copies," is the report of the British and Foreign Bible Society's sale of Bibles for last year. Moreover, the same organization estimates that during the 106 years of its existence it has issued no less than 222,000,000 copies of the Scriptures—a record that undoubtedly stands unequalled in the history of book publishing. As showing where the Bible circulates, the British Society estimates that "if the Bible Society could gather together representatives of all the nations and peoples for whom it has provided the Word of God in their mother tongue, every continent would send its delegates—75 from Europe, 152 from Asia, 103 from Africa, 32 from the Americas, and 62 from Oceanica—424 in all." And the sale of the Bible is steadily growing; sales last year were 685,000 in excess of the output in the previous year. When one remembers that these figures represent the activities of only one Bible Society and that a work of similarly immense proportions is carried on by organizations of the same kind in this country and elsewhere, the vitality of the Bible as a "best seller" becomes sufficiently apparent.—New York Times.

MIXED PICKLES.

Chop and mix well together the following: One gallon dry onions, one head of cabbage, one gallon green tomatoes and one-half a dozen green peppers. Place them in a thin muslin bag and allow them to drip till reasonably dry. Turn them into an earthen jar and add two tablespoons of salt, one tablespoon of ground cinnamon, a tablespoon of whole cloves and two tablespoons of ground mustard seed. After mixing well add a half cup of sugar and a cup of finely grated horse radish. Allow this mixture to stand for an hour and pour over it enough hot cider vinegar to cover the mixture, then place in jars, leaving space for fresh vinegar to be added if necessary the following morning, when the jars may be sealed and the mixture set away till needed.

Success doesn't come so fast, you know,
Unless you "plug."
You've got to work to make it go,
So "plug."
From Monday morn' till Saturday night,
Get in the game, get in it right,
And do the work with all your might,
Just "plug."

Sure, we must fight if we would reign,
So "plug;"
If you fail one time, try again,
And "plug."
Don't only draw your breath and pay,
But make the "boss" look up and say,
"He's gettin' better every day
Because he'll 'plug.'"

The man who can keep his money will soon have money to keep him.

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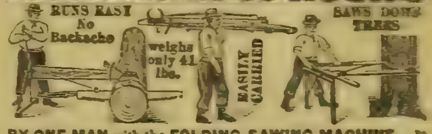

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San Francisco and Los Angeles Produce Markets

Los Angeles Markets

Butter.

LOS ANGELES, Nov. 30, 1910.

The butter market is exceptionally firm with slightly higher quotations, the last week.

Prices to trade 2½c in advance of the following Produce Exchange Quotations:

Extras	36½
Firsts	32½
Cooking	25

Cheese.

Local	18
Northern, fresh	18@18½
Oregon Daisy	18@18½
Imported Swiss	32
Domestic Swiss	22@24

Eggs and Poultry.

Eggs have dropped materially during the week, but at present quotations the market is firm and all offerings picked up quickly.

Paying price f. o. b., L. A. is:

Local ranch candled	47
Case count buying price	43
Eastern fresh	38
Eastern storage	34
Seconds	30

Dealers pay for live poultry f. o. b. L. A.:

Hens, per lb	15@18
Roosters	8@18
Fryers and Roasters	21
Broilers	26
Turkeys	20@24
Ducks	17½
Geese	17
Squabs, per doz	1.50

Live Stock.

The following quotations are f. o. b. Los Angeles, on all stock:

Hogs, 175 to 200 lbs	8½
Prime Steers	5
Heifers	4@4½
Calves, per lb	6½
Sheep, ewes, per head, shorn	5.00
Lambs, per head	3.75@4.25
Wethers, shorn	5.00

Potatoes.

Wholesale prices are:

Highlands	1.40@1.75
Salinas	1.85@2.00
Lompoc	1.85@2.00
Nevadas	1.75@1.85
New, per box	1.00
Sweets, Yellow, per ctl	1.75@2.00

Onions.

Wholesale quotations:

Australian Browns	1.75
Oregons	1.85
Yellow Danvers	1.75
Garlic	8

Vegetables.

Wholesale quotations:

Artichokes, northern, doz	1.25
Beets, sack	.90
Beans, Lima	6@7
Beans, green	6@7
Beans, wax	6@7
Brussels Sprouts	8@10
Bell Peppers, lb	6@7
Green Chilis	5@6
Cucumbers, per box	1.00
Cabbage, per sack	.75
Celery, crate	2.50
Cauliflower, crate	1.50@1.60
Carrots, per sack	.90
Corn, box	50@65
Egg Plant, per lb	6
Horseradish	12½
Onions, green, per doz bunches	.25
Leeks, per doz	.40
Lettuce, common, crate	1.25
Oysterplant, doz	.35
Okra, lb	8@10
Peas, per lb	8@10
Parsley, per doz bunches	.20
Parsnips, doz bunches	.35
Pumpkins, lb	1@2
Radishes, per doz bunches	15@20
Rhubarb, Cr, Winter, lb	6
Rhubarb, Strawberry	1.75
Spearmint, doz bunches	30@35
Spinach, per doz	.20
Hubbard Squash, lb	2
Summer Squash	.85
Tomatoes, lug	90@1.00
Turnips, sack	.90

Citrus Fruits.

Navels	2.75@3.00
Grapefruit	3.50
Lemons	3.50@4.50
Tangarines	1.75@2.00

Fresh Fruits.

Wholesale prices on the market are:

Alligator Pears	5.00
Apples, Belleflower	1.10@1.25
Spitzenbergs	2.00@2.25
Jonathans	2.25@2.50
Greenings	1.15@1.25
Pearmains	1.00@1.35
Pippins	1.15@1.35
Pineapples	7½@8½
Casabas, doz	1.50
Figs, box	2.00
Grapes, lug	1.25@1.75
Tokays	1.25@1.50
Mangoes, lb	10@15
Persimmons, lb	5@7
Pomegranates, lug	1.00
Guavas, basket	5@6
Pears, lb	5
Bartletts	2.50@3.25
Strawberries	10@15
Blackberries	12@14
Raspberries	10@12
Quinces, lug	1.00
Watermelons, lb	2@2½
Christmas Melons	2.25@2.50

Dried Fruits.

Wholesale prices are:

Apricots	12
Evap apples, fy, per lb	10@11
Figs, pound bricks, box 100	75@2.00
Peaches	6½@8
Nectarines	10
Pears	12
Prunes	6½@10½
Plums	10

Beans Dried.

Wholesale quotations:

Limas	5.25@5.50
Black eyes	5.50@6.00
Pinks	5.50@6.00
Lady Washington	4.25
Small White	4.00@4.25
Garvanzas	4.50
Lentils	7.00

Nuts.

Wholesale quotations are:

No. 1 soft shell walnuts	16
No. 1 H S	14
No. 2, all kinds	11

Grafted or budded an advance of 2½c.

Brazil nuts	14@15
Chestnuts	14
Filberts	14
Almonds, IXL, per lb, new	15½@16½
Pecans, polished	16@17
Peanuts, Eastern	7@7½
Peanuts, Cal	6

Honey.

Wholesale quotations:

Extracted water white	9@9½
Extracted light amber	8
Comb W. W.	18@20
Light amber	15
Beeswax	25@30

Hay.

Buying prices f. o. b. cars L. A. are:

Barley hay	10.00@13.00
Wheat hay	10.00@13.00
Tame oat	12.50@14.00
Alfalfa	10.00@11.00

Grain.

Wholesale selling price, f. o. b. Los Angeles:

Wheat, new per ctl	1.75@1.80
Corn	1.60
Popcorn	3.50@4.00
Kaffir corn	1.75
Egyptian corn	1.75
White oats	1.80
Rye	2.00
Seed Barley	1.20

Feed Stuff

Wholesale selling price f. o. b., Los Angeles:

Alfalfa meal	1.10
Cracked Corn	1.65
Cracked Wheat	1.90
Shorts	1.80
Bran	1.55
Oil Cake Meal	2.50
Feed Meal	1.70
Rolled Barley	1.15

San Francisco Markets

Butter.

SAN FRANCISCO, Nov. 29, 1910.

Butter advanced 5 cents from our last week's quotations and on Saturday stood at 39, but on Monday lost one cent and now stands at 38 for extras. Market firm.

California extras, per lb	38
California firsts	35
California seconds	30
Storage	31

Cheese.

California flats, new	13@16½
Cal. Young Amer. fy new	16½@18
Oregon, Fancy	16½

Eggs and Poultry.

Eggs dropped to 51 last week and increasing supplies are causing a still further weakening. Market not strong.

Official quotations of the S. F. Wholesale Dairy and Produce Ex. are:

Fresh ranch extras	50½
Firsts	49½
Seconds	33
Storage	31½

Hens, per dozen	4.50@10.00
Fryers, per doz	5.00@5.50
Ducks	6.00@10.00
Broilers	3.00@4.50
Roosters, per doz	6.00@8.50
Spring Turkeys	20@23
Geese	2.00@3.00
Pigeons	1.50@2.25
Squabs	3.00@3.50

Live Stock.

San Francisco prices gross weight:

Steers	4@5½
Cows and heifers	3½@4½
Calves, per lb	4½@6¼
Hogs	5@8½
Milk Lambs, Unshorn	6@6¼
Wethers No. 1	4¾@5
Ewes No 1	4½@4¾

Potatoes.

Wholesale market quotations:

River White, new, box	85@1.10
Salinas Burbanks	1.60@1.75
Oregon Burbanks	1.40@1.50
Sweets, ctl	2.10@2.25

Vegetables.

Wholesale quotations:

Artichokes	25@40
Beans, Lima, lb	4@5
Beans, string, per lb	7@10
Beans, wax	4@5
Cucumbers, hothouse, box	1.50@1.75
Celery, per crate	1.50@1.75
Chili Peppers, per box	25@40
Bell Peppers	6@7
Green Corn, sk	75@1.25
Egg Plant, box	40@65
Lettuce, per crate	4.50@5.00
Okra, box	40@60
Peas, per lb	6@8
Summer Squash, box 25 lbs	1.25@1.75
Rhubarb, box	1.00@1.25
Tomatoes	75@1.25
Garlic	2½@3

Onions.

Onions, sk, Cal	85@1.10

Citrus Fruits.

Navels, new	1.50@3.50
Grapefruit	1.50@3.00
Lemons	1.50@4.50
Limes	3.00@5.00
Tangerines	1.00@1.75

Fresh Fruits.

Apples, box	50@85
Apples. Bellflowers	90@1.00
Newtowns	75@1.25
Bananas, Hawaiian	2.00@3.50
Cranberries, Coos Bay, box	3.50@4.00
Figs, box, single	50@1.00
Grapes, Isabellas	90@1.15
Huckleberries, lb	7@10
Pears, Bartletts	1.50@2.00
Winter varieties	60@1.00
Persimmons, box	50@75
Pomegranates	50@1.50
Quinces, box	85@1.00
Raspberries, chst	5.00@7.00
Strawberries, chst	4.00@6.00

Dried Fruits.

Market is quiet and general tone not at all strong.

1910 crop, f. o. b., carload lots, per lb: Apples, 8@9c; Apricots, 10½@13c; do Moorparks, 14c; Peaches, 5¼@7c, with a premium of ⅛@¼c on Muirs; Prunes, Santa Claras, 5½c with ½@¾c premium on 40s; outsides 5¼@5⅜c; Figs, 4¾@6½c for White and 4¼@4½ for Black; Pears, 9¾@13c.

RAISINS—1910 crop: London Layers, in 20-lb. bxs: 6-crown clusters, $2.25@2.50; do, 5-crown, $1.75@2.00; do 4-crown, 1.40@1.50; 3-crown lawers, $1.25@1.30; do, 2-crown, $1.15@1.20. Seeded, per pkg.—Fancy, No. 16 5¾ 6c; Choice, No. 16, 5¼@5½. Loose Muscatels in 50-lb. bxs—Standard, 4-crown, 5½; do 3-crown, 4½@4¾c; do 2-crown, 4@4¼c. Dried Grapes, 3c. Seedless—Muscatels, 3½c; Sultanas, 4½c; Thompsons, 5c.

Nuts.

Walnuts, No. 1 soft shell	15
Walnuts, No. 1 hard shell	14½
Almonds, '10 N P U	13
Almonds, '10 Nonp	15
Almonds '10 I X L	14
Almonds, Peerless	12
Pecans	14@17
Chestnuts, Cal	6@8

Beans Dried.

Limas	4.65@4.75
Pink	4.75@5.00
Black eyes	5.50@5.65
Small White	3.65@3.75
Large White	3.65@3.70
Kidneys	5.50
Garvanzas	3.25
Bayo	5.00@5.25
Horse beans	2.00
Red Mexicans	5.25@5.50
Cranberry	4.50@4.75

Hops

Hops, coast, 1910	11@14
Hops, Oregon	11@14
Hops, 1909	8@11

Honey.

W. W. Comb '10	15
Dark Comb	12½
Extracted White	8
Extracted dark	6½
Beeswax, per lb	24@30

Hay.

We have received on the San Francisco market during the current week 3100 tons of hay, which shows a decrease of about 35 per cent from last week's arrivals.

It has been a good thing for the market that arrivals of hay have decreased to such an extent, for the reason that if the heavy shipments had continued to come forward into our markets, it probably would not have been possible to have maintained the present range of prices.

An occasional carload of strictly Fancy Wheat Hay, or strictly Fancy Red Oat Hay will sell in a small way at top prices, but outside of that the entire market is dull and slow, and prices are weaker and lower than they have been heretofore. No' different state of affairs could have been expected under the present condition of trade. There has been very little hay sent forward on shipping orders, and the local trade being quiet has caused a thorough dullness in all branches of the business.

Alfalfa hay appears to be in a little better favor, and apparently there is a firmer tone to the situation on this article.

We quote the wholesale prices in round lots on today market as follows, viz:

Fancy wheat	12.50@13.50
No. 1 wheat or wh and o	10.50@11.50
No. 2 wheat or wh and o	9.00@10.00
Choice tame oat	10.50@11.50
Other tame oat	8.00@9.50
Wild oat	8.00@9.00
Stock hay	5.50@6.50
Alfalfa, ton	9.00@11.00
Straw	40@50

Grain.

Wheat, No. 1	1.45@1.50
Barley, fancy	1.03¾@1.05
Barley, good to choice	1.01¼@1.02½
Barley, poor to fair	95@1.00
Oats, white	1.45@1.55
Rye, new crop	1.47½@1.52½
Alfalfa seed	18@20
Mustard brown	4½
Millet	2¾
Flaxseed	5@5½
Broom corn seed, per ton	23.50

Feed Stuff.

Bran, per ton	30.00@32.00
Feed cornmeal, per ton	36.00@37.00
Cracked corn	36.00@37.00
Ground barley, per ton	22.00@24.00
Rolled oats, per ton	29.00@31.00
Middlings	34.00@36.50
Oil cake, per ton	40.00@41.50
Cocoanut cake, per ton	25.00
Mixed feed, per ton	25.00@27.00
Shorts	31.00@32.50

Deciduous Market

SACRAMENTO, November 26th, 1910.

The following circular of the California Fruit Distributors gives number of cars of deciduous fruit shipped from all points in California for the week (7 days) ending Friday morning, November 25th, 1910:

Grapes:. 41 cars.

Shipments of this week have been slightly in excess of expectations and the end is not yet. There will be a few small shipments next week and practically all will be Emperors.

Citrus Market

LOS ANGELES, Nov. 30, 1910.

The auctions have been disposing of some Navels at exceptionally low prices, but these are the off-sizs or off-colored stuff which went in too freely for a short time. On the whole Navels are commanding fair prices. Shipments at this time are of much better colored fruit and also sweeter than the earlier ones. Southern California shipments which have started are found to be much farther advanced both as to color and sweetness than last year at this date. This improvement in quality is gratifying for various reasons, but principally because the consumer with a good taste in his mouth calls for more of the same, and an increase in demand this year with our big output means much.

New York and all other markets are showing greater appreciation of California lemons than ever. There have been times when a very few markets have shown California lemons commanding a dollar or more above Mediterraneans, but within the last week while Mediterraneans were selling in New York for $2.40 and $2.45, Californias commanded $3.45, $3.60 and even $3.65. In a word, California quality was never better than this year. Present quotations are lower than previous ones, but this is simply a drop to regular winter basis. The prices will probably remain about as at present for the season.

Shipments.

Shipments of oranges since November 1st, 1910, are 176 cars, of lemons 390 cars, making a total to date of 566 cars. To same date last season, oranges 185 cars, lemons 224 cars, making a total of 409 cars.

NEW YORK, Friday, Nov. 26.—Three cars of Navels, 1 car of lemons and 1 car of Arizona Navels sold. The market was somewhat lower on Navels, but there was a good demand at prevailing prices, and steady on lemons. It is raining.

NAVELS—	Avge.
Mariposa, Fy, Earl Fruit Co	$2.10
Blue Label, T C C Ex	2.35
Bear & Eagle, T C C Ex	2.40

LEMONS—Clown, Fy, Sparr Frt Co., $4.20; Crackshot, Or, Sparr Frt Co, $3.60; Arizona Navels, halves, $2.35; boxes, $4.00. This is the first car of the season.

CINCINNATI, Friday, Nov. 25.—Cool. Market active on lemons and steady on oranges. Two cars lemons and 1 car Navels sold; also 7 cars Floridas.

LEMONS—	Avge.
Pet SA Ex	$5.10
Duck SA Ex	3.70
Loma Ch Limoniera Co	4.85
Greyhound SA Ex	4.25
Bridalveil Or Limoniera	3.50
White Cross Or Limoniera	4.20

NAVELS—Mallard, $2.65.

FLORIDAS — Brights, $1.75@2.30; Russets, $1.75@2.30.

CHICAGO, Friday, Nov. 25.—LEMONS Supply good and market easy. Boxes, California fancy, 300s, $5 @ $5.60; 360s, $4.50 @ $5.00; extra choice, 25@50c per box discount.

ORANGES—Quotably rather easy. Market well supplied and today buyers did not respond freely. Former prices asked and holders had to wait until quietness, following a holiday, wears off. Boxes, late Valencias, extra choice, 96s, $3.25 asked; 120s, $3.75@$4.00; 150s, 210s, $4.00@$4.50; choice 36s $3.00 @ $4.25; 126s, $3.25@$3.50; 150s, 210s, $3.75@$4.00; navels, California, 96s, $2 asked; 126s, $2.75 asked; smaller sizes, $3 asked.

BOSTON, Friday, Nov. 25.—Five cars sold. Raining. Market easier.

VALENCIAS—	Avge.
Coyote OK Ex	$2.55
Quail OX Ex	3.10

LEMONS—	Avge.
Pet SA Ex	$4.30
Laurel QC Ex Corona	4.70
Greyhound SA Ex	3.75
Princess QC Ex Corona	4.30

NAVELS—Mariposa Fy Earl Ft Co $2.55.

CLEVELAND, Friday, Nov. 25.—One car navels sold. Market lower. Cold and cloudy.

NAVELS—	Avge.
Forget-me-not TC Ex F'ville	$2.40

ST. LOUIS, Friday, Nov. 25.—Cool. Market steady. Two cars navels and 2 cars lemons sold.

NAVELS—	Avge.
Planet SS Ex Orange	$2.20

$25.00 PER ACRE

is the present price of

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Put in your orders for Florida sour orange seed before the first of the year and be sure of getting your seed. We are collecting personally our own seed. A deposit of 1-3 required. Address OTIS E. HYDE, 1314 West 51st St., Los Angeles.

Pioneer Spl Pioneer Ft Co.	2.20
Searchlight SS Ex Orange	1.90
Hetch Ketchy	2.10

VALENCIAS—	Avge.
Searchlight SS Ex Orange	$3.85
Sunset SS Ex Orange	3.20

LEMONS—	Avge.
Regal QC Ex Corona	$3.85
Camel Ex Corona	3.90
Corona Beauties Ex Corona	3.80
Symbol Ch Stewart Ft Ct	3.40
Homer QC Ex Corona	4.05
Family Ex Corona	3.50
Grove Ex Corona	3.50
Sumclass Sd Stewart Co	3.25

PHILADELPHIA, Friday, Nov. 25.—No California fruit sold. Twelve cars Floridas sold. Oranges, $1.30@2.70; average, $2.20; Grapefruit, $1.45@3.65; average, $2.50, Tangerines, halves, $1.45 @2.50. Market firm.

NEW YORK, Monday, Nov. 28.—Five cars of navels and two cars of Valencias and four cars of lemons were sold. The market was higher on fair colored stock and unchanged on pale stock. Prices were lower on lemons and unchanged on Valencias. The weather was cloudy.

NAVELS—	Avge.
Mt. Whitney, CCC Ex	$3.35
Blue Label, CC Ex Lindsay	2.30
Pioneer Spl Pioneer Co	2.20
Hetch Hetchy	1.85
Mariposa Fy Earl Ft Co	2.40
Mariposa Earl Ft Co	2.60

VALENCIAS—	Avge.
Coyote OK Ev	$2.60
Columbia	3:50
Standard	2.15

LEMONS—	Avge.
Punch ST Colegrov	$3.95
Club	3.55
Quail OK Ex	3.80
Independent XF Ind Ft Co	4.05
Fancy	3.25
Clown Fy Sparr Ft Co	3.85
Crackshot Or Sparr Ft Co	3.20

PITTSBURG, Monday Nov. 28.—Four cars sold. Market firm on good stock navels; easier on lemons, Raining.

NAVELS—	Avge.
Sphynx CC Lindsay	$2.50
Pioneer Spl Pioneer Ft Co	2.60
Full Value CC Lindsay	2.05
Pride of West, Pioneer	2.45

LEMONS—	Avge.
Mission ST Santa Barbara	$4.05
Moose, OK Ex	4.00
Festival St Ex Santa Barbara	3.40
Pronghorn OK Ex	3.70

PHILADELPHIA, Monday, Nov. 28.—One car navels and 2 cars lemons sold.

NAVELS—	Avge.
Pioneer Fy, Pioneer Ft Co	$2.65
Pride of West, Pioneer Ft Co	2.15
Hetch Hetchy	2.20

LEMONS—	Avge.
Quail OK Ex	$4.55
Golden Sceptre, Or, Rialto Or Co	3.65
Coyote, OK Ex	3.05

Twenty-two cars Floridas sold. Oranges, $1.25 @ $3.85, average $2.10. Grapefruit $1.25@$4.10, average $2.60 Market steady.

BOSTON, Monday, Nov. 28.—Seven cars sold. Weather cool, cloudy. Market unchanged on oranges, easier on lemons.

LEMONS—	Avge.
Lotus, OK Ex	$3.55
Rey, St Ex Fernando	3.90
Watchuma, CC Ex Lemon Cove	4.20
Lotengo Fy, Sparr Ft Co	3.30
Monogram OK Ex	3.10
Tunnel ST Ex Fernando	3.30
Clown Fy Sparr Ft Co	4.10
Circus XC Sparr Ft Co	2.70

NAVELS—	Avge.
Mariposa Fy, Earl Ft Co	$3.65
Mariposa Fy, Earl Ft Co	2.25

VALENCIAS—	Avge.
Orchard, Or Nat Og Co	$4.30
Standard, Std Nat Og Co	2.95

CHICAGO, Monday, Nov. 28.—Lemons—Easy and in good supply. Boxes, California fancy, 300s, $5@$5.50; 360s, $4.50@$5.00; extra choice, 25@50c discount.

Oranges—There is not a great deal doing. There is a thoroughly good supply on hand. Demand is quiet and the undertone is easy. Boxes, late Valencias, extra choice, 96s, $3.25; 126s, $3.75 @ $4.00; 150s, 216s, $4.00@$4.50; choice, 96s, $3.00@$4.25; 126s, $3.25@$3.50; 150s 216s, $3.75@4.00; navels, California, 96s, $2.00; $2.75; smaller sizes, $3.00.

ST. LOUIS, Monday, Nov. 28.—Cold. Market firm on good stock. Two cars navels and one car lemons sold.

NAVELS—	Avge.
Bear and Eagle, Tc Ex Lindsay	$2.20
Gold of Ophir, BC Palermo	2.30

LEMONS—	Avge.
Horseshoe, Sweetwater, Bonita	$3.70
Monticello, Sweetwater	3.15

CLEVELAND, Monday, Nov. 28.—One car navels and one car lemons sold. Market firm on navels, lower on lemons. Raining. Predicted cold.

LEMONS—	Avge.
Pet, SA Ex	$3.90
Greyhound, SA Ex	3.25
Bear and Eagle, TC Lindsay	$2.35

NAVELS— Avge.

CINCINNATI, Monday, Nov. 28.—Cool. Market declining. Eight cars Floridas sold.

BRIGHTS, $1.60 to $2.40; RUSSETS, $1.60 to $2.40.

California Cultivator

Clubbing Price List

FOR THE SEASON 1910-'11

Prices are Good to Oct. 1, 1911

This magazine price list is prepared annually for the convenience and benefit of Cultivator subscribers. The prices given allow our readers the benefit of the lowest figures possible, in return for which, all we require is that to all orders a year's subscription to the Cultivator (class 18) be added at 90c (regular price $1.00 per year).

This year the pricing of various combinations of magazines is a simple matter; all are listed according to class number and this class number multiplied by 5 gives the cost price.

EXAMPLE:

Class No.		Regular Price
20	American Magazine	$1.50
16	Delineator	1.00
37	World's Work	3.00
18	Cultivator	1.00
—		

91X5=$4.55. Club price for all. Amount saved on this club, $1.95.

We desire to especially call attention to this complete list of the most popular magazines. We can, however, supply any periodical published, at the lowest price, and any not listed here will be quoted on request. Let us make you a price on any combination you may desire.

Periodicals in any combination may be ordered to the same or different addresses. Foreign or Canadian subscriptions are extra on account of added postage and prices must be gotten by correspondence. Subscriptions may be either "new" or "renewals," but it is important that this information be given in each case.

Books—Send us a postal for our list of agricultural books which we supply subscribers and which we recommend as most suited to California conditions.

Don't overlook this special:

The California Cultivator (weekly) } Both one year for $1.50
The Rural Californian (monthly) }

Our Money-Saving Combinations:

The price of the Cultivator and any single magazine may be obtained by adding 90c to the class price of the magazine desired.

Make up your orders from the following, noting that the class numbers multiplied by 5 gives the cost price. Also bear in mind that all orders must include a year's subscription to the Cultivator (class 18) at 90c.

MISCELLANEOUS

Class No.		Reg. Price
19	American Sheep Breeder	$1.00
47	Automobile	3.00
8	Boys' World	.50
23	Breeders' Gazette	1.75
27	Cassell's Little Folks	1.50
77	Century Magazine	4.00
65	Country Life in America	4.00
12	Designer	.75
8	Girls' Companion	.50
70	Harper's Weekly	4.00
70	Harper's Magazine	4.00
8	Ladies' World	$0.50
17	Human Life	1.00
9	McCall's Magazine	.50
12	Modern Priscilla	.75
15	National Monthly	1.00
70	North American Review	4.00
47	Outing Magazine	3.00
8	Reliable Poultry Journal	.50
40	Scientific American	3.00
60	Scribner's Magazine	3.00
57	St. Nicholas	3.00
15	Woman Beautiful	1.00
37	World's Work	3.00

CLASS 16.

Amer. Agriculturist	$1.00
Black Cat	1.00
Cooking Club Mag.	1.00
Delineator	1.00
Health	1.00
Housekeeper	1.00
Judge's Library	1.00
Judge Quarterly	1.00
Orange Judd Farmer.	1.00
Pacific Monthly	1.50
Pictorial Review	1.00
Progress Magazine	1.00
Sis Hopkins	1.00
Uncle Remus	1.00
World's Events	1.00

Any two $1.60

Any three $2.40

Any four $3.20

Any one with 1 of class 17 $1.65

Any two with 1 of class 17 $2.45

Any one with 1 of class 20 $1.80

Any one with 1 of class 22 $1.90

CLASS 17.

Amer. Bee Journal	$1.00
American Boy	1.00
Am. Primary Teacher.	1.00
Boston Cooking School Magazine	1.00
Camera Craft	1.00
Children's Magazine	1.00
Cosmopolitan	1.00
Dressmaking at Home	1.00
Electrician and Mechanic	1.00
Health Culture	1.00
Human Life	1.00
Little Folks	1.00
Motor Magazine	1.00
National Sportsman	1.00
Nautilus	1.00
N. Y. Tribune Farmer	1.00

Any two $1.70

Any three $2.55

Any four $3.40

Any one with 1 of class 16 $1.65

Any two with 1 of class 16 $2.50

Any one with 1 of class 20 $1.85

Any one with 1 of class 22 $1.95

CLASS 20.

American Magazine	$1.50
Columbian Magazine	1.50
Good Housekeeping	1.25
Harper's Bazar	1.25
Metropolitan Magazine	1.50
Pearson's Magazine	1.50

Any two $2.00

Any three $3.00

Any two with 1 of class 35 $3.75

You may add to any Club

All Story Mag.	$1.00
Argosy	1.00
Ladies' Home Jr	1.50
Scrap Book	1.00
Sat. Eve. Post	1.50
Munsey's Mag.	$1.00

CLASS 22.

Ainslee's Magazine	$1.80
American Magazine (after Feb. 25, 1911)	1.50
Amer. Photography	1.50
Baseball Magazine	1.50
Country Gentleman	1.50
Etude	1.50
Everybody's Magazine	1.50
Field and Stream	1.50
Garden Magazine	1.50
Hampton's Magazine	1.50
McClure's Magazine	1.50
Musician	1.50
National Magazine	1.50
Photo Era	1.50
Shield's Magazine	1.25
Short Stories	1.50
Smith's Magazine	1.50
Sunset Magazine	1.50
Taylor Trotwood Mag.	1.50
Teachers' Magazine	1.25
Technical World	1.50
Travel Magazine	1.50
Woman's Home Comp.	1.50
World To-Day	1.50
Young's Magazine	1.50

Any two $2.20

Any three $3.30

Any four $4.40

Any one with 1 of class 35 $2.85

Any two with 1 of class 35 $3.95

Any two with 1 of class 16 $3.00

Any two with 1 of class 17 $3.05

Any two with 2 of class 17 $3.90

CLASS 25.

Farm Journal .10 yrs.	$1.50
Office Appliances	1.50
Physical Culture	1.50
Ladies' World.) Modern Priscilla) all 1yr Pictorial Review)	2.25

Any one with 1 of class 35 $3.00

Any one with 1 of class 22 $2.35

CLASS 35.

Current Literature	$3.00
Lippincott's Magazine.	2.50
Recreation	3.00
Review of Reviews	3.00

Any two $3.50

Any three $5.25

CLASS 45.

House Beautiful	$3.00
House and Garden	3.00
Mining World	3.00
Suburban Life	3.00

Any two $4.50

Any one with 1 of class 16 $3.05

Any one with 1 of class 17 $3.10

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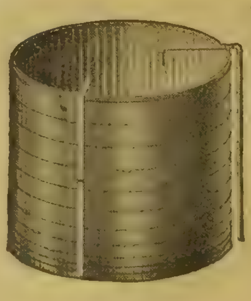
115-117 N. Broadway Los Angeles, Cal.



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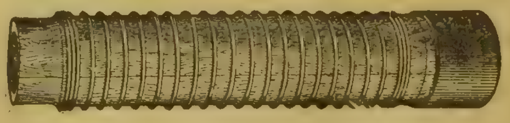

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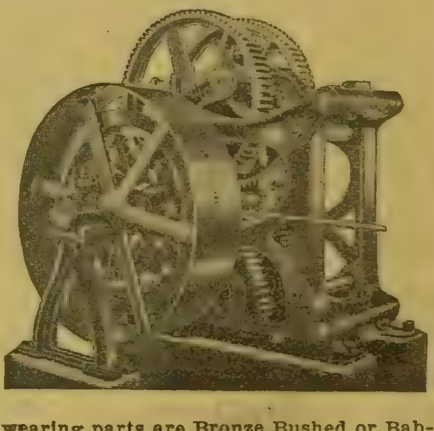

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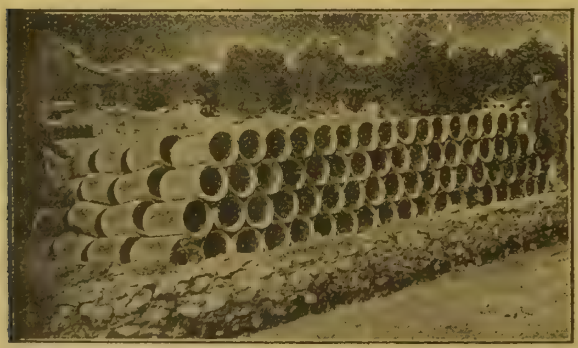

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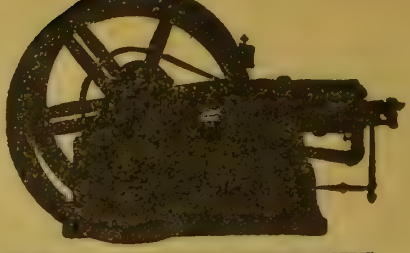

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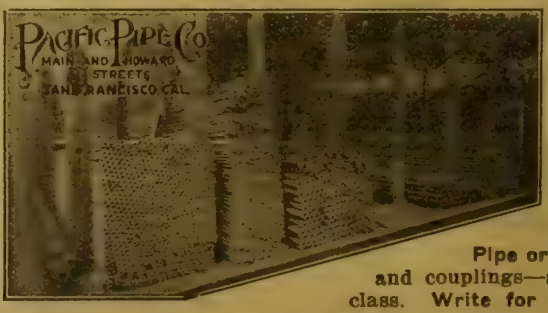

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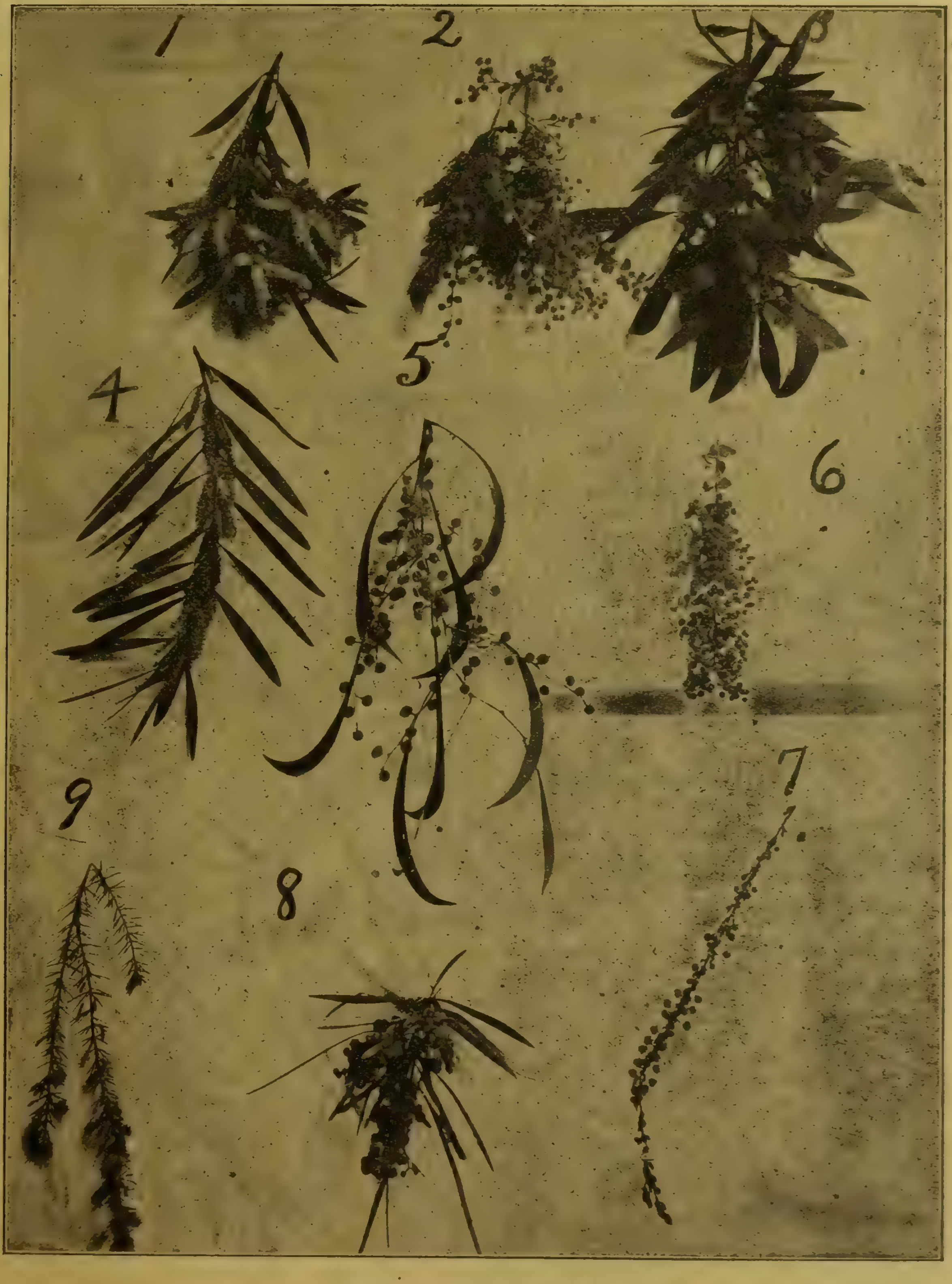
Los Angeles December 8, 1910 San Francisco



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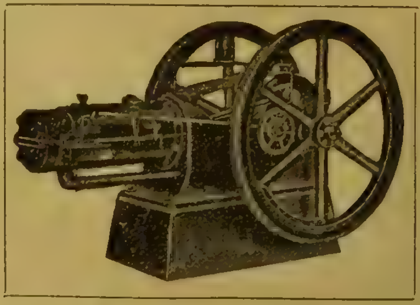

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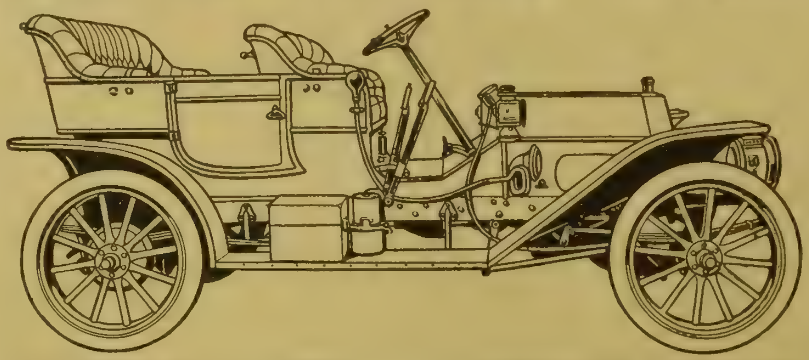

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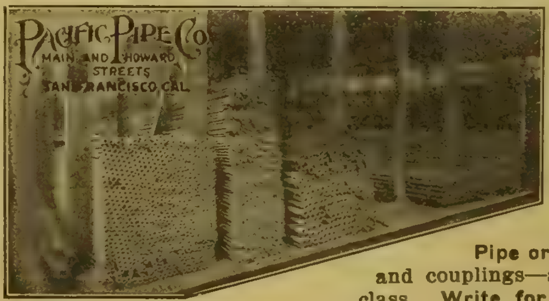

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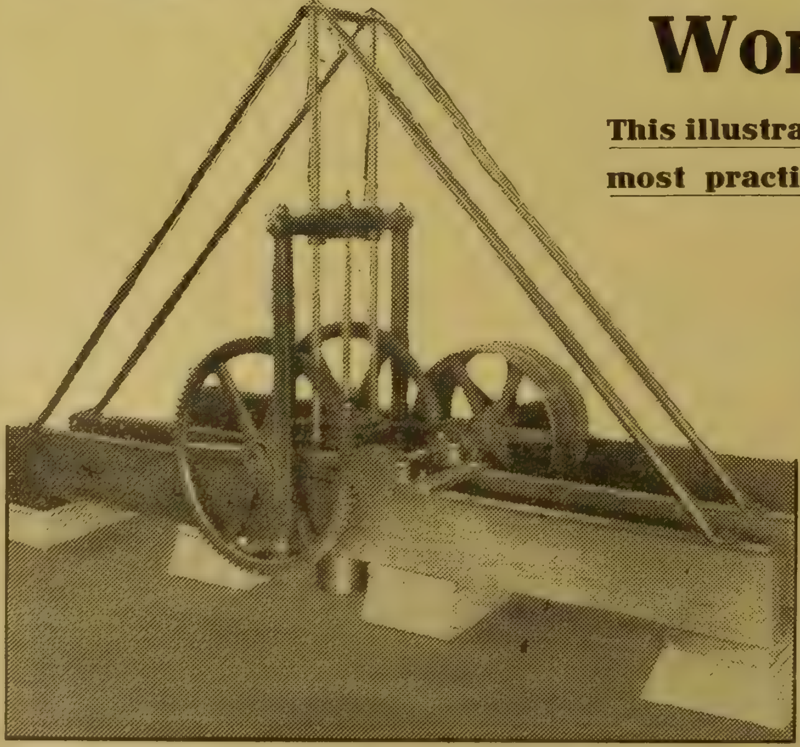

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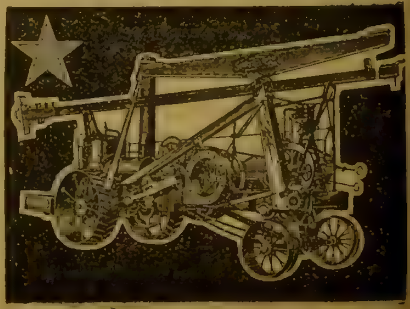

California Cultivator

Vol. XXXV—No. 23 Los Angeles, California, Thursday, December 8, 1910 Subscription $1 a Year

One of Largest Families in the Vegetable Kingdom

A Tree Which has Wonderful Possibilities in the Golden State.—A Description of a Few of the Sun Blooming Acacias

Approximately four hundred species of acacias flourish in the temperate and semi-tropical zones, and the genus is one of the largest known. California appears to especially favor these plants, for many varieties are grown with success. Widely varied in form and foliage, from dwarfish shrubs to gigantic trees, its jewel-like blossoms varying in complexion from pale lemon to deep orange, some creamy-white and—even although rarely—red, and from tiny globules to long cylindrical spikes, the acacia constitutes one of nature's numerous, splendidly caparisoned beauties of the Golden State.

Volumes can be published anent these interesting floriferous growths; limitation shall, herein, however, be taken to a description of the most popular variations of these arbor gems. Endeavor shall be observed to define as simply yet accurately as possible, and should it be desirable to incorporate botanical terms and phrases exegeses of the same shall be rendered herewith.

The species are divisible into two groups, to-wit: First. The feather or bipinnated leaved, and, second, the phyllodious or simple leaved. Three kinds represent the feather leaved type, i. e.: The mollisima, dealbata and decurrens—to which may also be added the Baileyana. The first two resemble each other so closely that they are frequently confused by gardeners. Nevertheless, each has distinguishing characteristics that are easily noticeable by careful examination and comparison.

From a petiole or leafstalk extend several leaflets or pinnae; from these pinnae radiate several minute parallel rays or pinnules, establishing thus the architecture of the feather or bipinnated leaf, and thereby distinction of the four kindred species is readily attainable. The flowers of this variety are in round heads or globules.

A. mollissima (figure 2 on cover page), as the name implies, is the softest leaved, the pinnules are an oblong-lozenge shape and comparatively broader, more frayed and crowded, overlapping each other slightly, they are more or less mealy. Golden yellow flowers.

A. dealbata, pinnules narrower, less mealy and more remote from each other, leaves present a harder appearonce; the pinnae are also slightly further apart.

A. decurrens, fine, needle-like pinnules, not mealy; pinnae remote and decurrent or drooping from the stem. The preceding three species grow in trees, some of which attain an elevation of thirty-five feet in favored localities.

A. Baileyana, a beautiful small tree, branches curving gracefully sideways; flat, bipinnated leaves; the pinnules are oblong-lozenge shaped, uniformly disposed. The branches and leaves evince a silvery-white, glaucous aspect, due to a fine adhesive white powder. Flowers are yellow heads or globules. This tree, while still uncommon, bids fair by its exceeding grace and grandeur to become one of the most popular of the species.

The simple or phyllodious leaf is constituted by a dilated petiole or leafstalk forming into a blade. The following species are thus endowed:

A. cultrifonnis (figure 6), a handsome, bushy shrub; small knife-formed leaves distributed vertically along the branches; both leaves and branches (like A. Baileyana) are covered with a white, mealy, microscopically fine adhesive powder, exhibiting a silvery-white appearance. Flowers in golden yellow globules in crowded clusters. A gorgeous ornament minus which no garden is complete.

A. Armata (figure 7), Kangaroo Thorn. Spreading spiny shrub six to ten feet high, branches pubescent, leaves small and slightly ruffled, borne all along the branches; fragrant, deep yellow globules. Splendid hedge.

A. verticillata (figure 9), whorled leaf), bushy, spreading shrub, distinguished for its needle-like leaves, one-half inch long. Flowers in yellow spikes one-half inch long. An excellent hedge; will endure trimming indefinitely.

A. longifolia, variety Sophorae (figure 1), small tree or large shrub; bears abundant bright, yellow, handsome spikes or catkins.

A. pycnantha (figure 5), medium size tree, sparsely foliaged, leaves long and very narrow in upper portion, lower half expanding to form one-half to two-thirds of an inch, blade curving into a crescent and terminating in a point. Flowers yellow globules.

CORDYLINE AUSTRALIS.

A handsome palm-like plant, native to New Zealand, with a stout branched stem, and with flag-like leaves from two to three feet long. A strikingly individual plant in many of our parks and gordens.

A. longifolia (figure 4), small tree, flowers long, deep yellow spikes distributed along the smaller drooping branches.

A. cyanophylla (blue leaf tree). A medium size tree bearing an abundance of foliage, drooping branches and large, beautiful golden globular flowers, lance-shaped leaves, dark green in color, faintly besprinkled by a fine, white, mealy powder which imparts a bluish cast; the lower leaves reach a length often to twelve inches, and the upper six inches or less. This tree is frequently misnamed A. saligna, or rather substituted for the latter.

A. neriifolia, or A. retinodes (figure 8), slender branches, small tree, very narrow leaves, flowers light yellow heads.

A. melanoxylon (figure 3, Blackwood), tall, dark foliage, many veined, dark leaves, mostly three to four inches long, thick and stiff; flowers few, creamy-white globules. This is indubitably the homeliest of the popular species and is certainly not recommendable for garden and street culture, regardless of its apparent popularity, when so many finer varieties are available.

Chemical Acacias.

It is undoubtedly of interest to many to learn that the aforementioned acacias are members of the same family from which gum arabic is obtained, with which most of the mucilage of commerce is manufactured. The gum is secured from the acacia arabica vera, a spring species, grown in the desert areas of Senegal and the upper Nile region, where the gum collects spontaneously under the bark, and breaks out through the openings and dries on the surface in the form of round or tear-shaped masses.

Catechu, which is valued in the materia medica as an astringent medicine and in the arts as a valuable tannin, is derived from the acacia catechu, which is indigenous to tropical East Africa.

Tentative culture has not been successful to date in the acclimatization of these drug-producing species in the United States. Sufficient experimentation, however, has not been devoted to justify discouragement nor even comment upon the faculty of these specimens for arboriculture in America.

The bark of the black wattle tree (acacia mollissima, figure 2) has long been in use for tanning purposes. It does not communicate to the leather so fine a bloom as the bark of the American oaks or the acorn cups of the valonia oak, but it tans more quickly and is in good and increasing demand for the common grades of leather.

Formerly the supply of tan bark came from the forests of Australia, but within the last seven or eight years the colonial plantations of Natal, South Africa, have begun to supply a large proportion of the bark and the enthusiastic residents of the colony emphatically assert that wattle growing is the most profitable plant industry in their country.

Most of the acacias grown in California are originally from Australia, but manifestly thrive better in their adopted country than on the continent of their nativity. In view of this fact it may not be long hence when American tanners will be supplied by American husbandmen, and a new industry prosper on the Pacific Coast.

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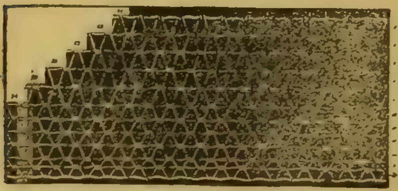
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Citrus and Tropical Fruits

ROBERTSON'S REPORT ON CITRUS FRUITS.

Mr. George Robertson, statistician of Fresno county, makes the following report on citrus conditions:

It seems that, as with raisins, the imports of foreign citrus fruits are decreasing, while the exports of domestic fruit continue to increase.

Herewith are given reports on Spanish, Florida and California prospects in the coming season:

Spain.

The latest reports from Spain, dated November 1, stated that the shipments will be small until about the middle of the month. The oranges are of excellent quality, the late rains having greatly improved the fruit. Regarding the size of the crop, in some districts it is good, in others nearly 50 per cent shorter than last year, but is very much finer. The fruit is not coloring so fast, as was at first expected. Prices range higher than last season.

Florida.

Reports received from Florida as late as November 8 state that the reports published in the press that the orange crop had been destroyed by the recent storm were greatly exaggerated.

Last year the shipments were a little over 6,000,000 boxes; this year they are expected to be under 5,000,000, oranges being about 60 per cent short, tangerines about 75 per cent short, and grape fruit a full crop.

In several counties the loss is estimated at only 3 per cent, and reports received from 200 parts of the state would indicate that the damage did not exceed 7 per cent. The storm was accompanied by copious rains, which produced rapid growth of the still unmatured fruit on the trees, which will probably more than offset the loss from the wind. A large orange grower states that the crop as a whole has been damaged very little, and in some instances has been benefited by the rain. In one large grove, where the white fly was very bad, the fruit being almost black, the heavy rains and wind have cleaned the fruit until it looks almost as if it had been through a washing machine, and have added hundreds of dollars to its value. It is also stated that the Florida Citrus Exchange is maintaining a price of $2.25 per box for oranges, and $3 a box for grape fruit f. o. b. packing house. It is claimed that the Florida standard boxes are larger than those used in California, the former containing about ninety-three pounds of fruit, and the latter seventy-four pounds. The fight between the independent shipper and the Florida Citrus Exchange has formally opened for the present season. Competition is unusually keen, and it is believed the efforts of the exchange to ship only ripe fruit and sound fruit will be rewarded as in the past season.

Indeed, at the present time the exchange is getting what it asks for its fruit, notwithstanding its prices are higher. Orders are coming in faster than they can be filled.

Fresno growers, both of oranges and raisins, might study these facts with advantage.

California.

In Southern California it looks as if the crop of oranges and lemons now upon the trees was considerably larger than that of last season, and it is probably the largest crop of citrus fruit ever grown. The condition of the crop at the present time is excellent, and that already forwarded to market from north of the Tehachapi is giving great satisfaction. Southern shipments have not yet begun.

The number of cars shipped during the last seasons has been:

Oranges — 1908-1909, 31,895; 1909-1910, 25,331. Lemons — 1908-1909, 6,196; 1909-1910, 4,782.

Butte County.

The crop in the Oroville district is about the same as last year, there being a shortage of some 5 to 7 per cent in some orchards, with a considerable increase in others. Oranges are coloring well and are in fine condition. The shortage in a few orchards was occasioned by a severe wind, which caused a dropping of fruit in exposed orchards.

Louisiana.

This year's Louisiana orange crop will exceed that of last year by several thousand boxes. The crop is rapidly maturing, and is estimated at from 325,000 to 350,000 boxes.

Fresno County.

The crop is about the same or rather larger than last year. The quality is good, and probably a week or ten days in advance of last year. A considerable quantity of the fruit has been already shipped, which is rather unusual for this time of year in Fresno county. The condition as regards quality and size will compare very favorably with those from other districts.

Imports and Exports.

The value of citrus fruits imported into this country during the last five years has been as follows:

	Oranges, Value.	Lemons, Value.
1906	$456,726	$2,933,990
1907	354,495	4,253,296
1908	275,060	4,388,530
1909	137,390	2,623,399
*1910	57,550	2,690,072

*Nine months ending September.

Domestic Imports.

	Oranges, Value.
1906	$1,110,993
1907	1,255,104
1908	1,577,661
1909	2,131,724
*1910	1,919,017

*Nine months ending September.

FROST PROTECTION.

The unfortunate hurricane which swept over the citrus sections of Florida last month and which did a certain amount of damage to oranges was a condition that could not be anticipated and one which no human force could have minimized in the slightest degree. It was an unusual occurrence and may never happen again with equal severity during the lifetime of the present inhabitants of the state.

With all the destruction that the winds left in their path the actual loss in dollars and cents to the citrus fruit growers was not a comparison to what may sometime happen through the insidious visitation of silent Jack Frost. Possibly there are no absolutely "frostless" sections within the confines of the United States. There are certain districts which are claimed to be immune but there does not appear to be any good reason for believing that any portion of the country may not be visited by frost.

It needs but a few hours for frost to destroy the work of the year or at least to reduce the value of an orange crop to a very appreciable extent. Not only does the grower lose a good part of the value of the affected fruit, but where such oranges are shipped at cheap prices the value of his, or his neighbor's better fruit is hurt to a degree. First because a given quantity of oranges selling at a low price renders it difficult for the retailer to get the legitimate price for the immune fruit but because frosted stock disgusts the consumer to such an extent that for the time being at least, he is out of the market for any kind of oranges and thus consumption is lessened.

With such a condition confronting the grower the natural conclusion is that he wants to find some means to minimize the danger, at least to the extent of taking a fighting chance to save his fruit. To this time the only artificial means in sight are those of fighting the frost with fire and smoke. All growers who have adopted the latest scientific means of fighting frost report at least a partial success and there seems to be no good reason to believe that even with the present equipment at hand that all endeavors to thwart the enemy should not meet with complete success, always with the proviso that the thermometer outside the protected district does not stay below 25 degrees for too long a time and provided the grower be provided with sufficient and proper equipment and plenty of fuel.

To know when to fire and to be Johnny-on-the-spot at that time is of course very essential. In communities not in direct touch with the weather bureau it would seem absolutely essential that the farmer stay up all night to watch his thermometer when danger threatens or that he install an automatic frost alarm, now in common use in all sections of the country where fruit growing is done on a large scale. If the common house thermometer is to be depended upon it should be tested for accuracy and any government bureau office will do this work free of charge. Cheap thermometers are not wholly reliable and may vary from two to five degrees in their readings and this is not close enough for the important work for which they are used.

There are several efficient smudge pots now on the market and no doubt the selling agents are perfectly willing to give an orchard test at any time to satisfy any possible purchaser or group of interested growers. The main thing is to get an equipment that you are satisfied will do the work claimed for it and to get enough equipment so that you will not fall down when the time comes through a mistaken endeavor to save one the original cost price of the outfit.

Insurance of any kind is hardly wasted. The man who carried it was protected during the time he paid for it and that is all he paid for. The writer once heard a man refuse to take out a fire insurance policy because, as he said, he had been insured for ten years and never had had a fire and he called it money thrown away. He seemed to regret that he had never been able to bring a bill against the insurance company. Danger from frost is a nearer possibility than danger from fire and usually much more expensive when it does come.—Florida Fruit and Produce News.

ARIZONA ORANGES.

Arizona orange growers are much gratified at the prices their fruit commands, and quote about a $6 average received in Eastern markets during December and January, 1908 and 1909, as evidence of the market's consideration of them.

Regarding this year's shipments the Arizona Republican says:

"Seven carloads of oranges have been shipped to Eastern points by the Arizona Orange Association since the present season began. Two carloads will go out today, and two more each day until the end of the week. By that time the size of the crop can be guaged with some degree of accuracy. At present it can only be guessed at.

"The packing house is handling the oranges as fast as they come in. Up to this time it has never been taxed to its capacity. Two carloads a day can be handled with ease. This week may be its busiest period of the entire season.

"So far as quality goes, the oranges are just what are wanted in the Eastern markets. The only drawback to this year's crop is that the oranges are too large.

"Dealers prefer to handle oranges that run about 125 to the box. The average is about 150. But this season's oranges from the Salt River Valley groves are so uniformly large that some of them run only 64 to the box. They are just a little bit too small to be called pumpkins, but are in many cases fully as large as cantaloupes.

"The situation that confronts the growers of this valley is indeed unique. They stand in actual danger of losing a portion of the profits they expected, because their oranges are so large."

Speaking of a shipment of Arizona oranges a dispatch in a daily paper says:

"Monday the first carload of Arizona oranges was started by fast freight for New York, where the highest prices ever known for the local product are expected. It is believed that the best of the fruit will realize $10 a box. The fruit is sweet and well flavored and fairly well colored. Three carloads will go out this week. The crop in this valley is expected to be very light this year, owing to the cold weather of last winter, and it is improbable that more than eighty carloads of strictly first-class fruit will be dispatched."

THE CHERIMOYA.

Anona Cherimolia, "cirimoya," by some wrongly called "custard apple," which name belongs to the West Indian A. Reticulata, has never been a success in California. A small bushy, tree, with broad, aromatic leaves, and greenish flowers, not attractive, but exhaling a most delicious allspice fragrance, mostly during the night. It will begin to bear when about three years old, its large, variously shaped fruits, of a dull green color, attaining over one pound in weight and of the consistence of ice cream when ripe; taste hard to describe, but generally relished by everybody. It grows easily and fast, and ought to be in every garden for the merits of its foliage, flowers and fruits combined. To the present date only seedlings are grown, but now that more attention is being paid to this delicious fruit, improved varieties are sure to be noticed and propagated by grafting or budding.—Dr. F. Franceschi.

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LOW-HEADED TREES IN THE ORCHARD.

By R. S. Herrick, Colorado Agricultural College.

During these days when some advancement is being made in our orchards along more scientific lines, one often hears arguments against some of the things proposed and practiced by some of our best orchardists. One of these is against the low heading of fruit trees.

By a high-headed tree we mean one whose branches come out of the main trunk four or five feet above the ground, or, as the writer heard one man say, "high enough so that you can get a horse close to the tree in cultivating." By low-headed trees we mean trees headed near the ground depending somewhat upon the variety. Peaches in one of our best peach growing sections are headed practically at the ground, while apples are headed from twelve to eighteen inches above. It is, of course, possible to allow the fruit-bearing wood on what was at first a low-headed tree to be several feet from the original head, but with proper pruning from the start this trouble can be easily overcome.

An apple tree that is headed high is, in some respects for practical purposes, anything but high; for example, the chances are that such a tree will have the lower branches, at least, growing at almost right angles to the trunk, or in other words, in a horizontal position. When such a tree is bearing a heavy load of fruit, these limbs will bend down and are very likely to break unless props are used. The use of props in an orchard is at least a sign of very poor orchard management in the past, and should be avoided. It is possible to train the high-headed tree so that the branches will have more of an upward growth, but it is a recognized fact that work done several feet from the ground is never as satisfactory as when done from a short ladder, or while standing on the ground.

In a low-headed, well-trained and pruned tree we have all the essentials for a profitable one, other things being right. We have a tree that is easily managed in regard to pruning, spraying, thinning and packing. Good labor for doing these things is always at a premium, and it goes without saying that the amount of time it takes for such an orchard is less than for a high-headed one. In the second place, it is a well-known fact that low-headed trees are far less subject to sun scald than high-headed ones. And the third reason is that when orchard heaters are used the low-headed trees receive more benefit than the high ones. Especially is this true when a strong, cold wind is blowing. The writer has seen a notable example of this in a peach orchard where orchard heaters were used. During the coldest nights there was a heavy, cold wind, the consequence of which was that scarcely any fruit was borne above the four and one-half foot mark, and just a little above this point a thermometer was located which showed a temperature many degrees below the danger point. Below the four and one-half foot mark there were plenty of peaches; in fact, some of them had to be thinned.

HOME-MADE VINEGAR WITHOUT CIDER.

Take a gallon of cornmeal and boil in water until it is soft; put it into a ten-gallon barrel and fill with strong molasses and water. (I prefer sorghum or sugar house molasses.) Two gallons of molasses will be about the right quantity. Leave the bung out and tack a piece of cloth over the hole. In a short time it will be good vinegar. If it should be too weak, more molasses and water can be added or the washings of vessels that have contained honey or molasses may be poured into the barrel as they accumulate. Rainwater is best to use. The use of a piece of "mother" will hasten the making. As soon as the vinegar is made it should be racked off or strained and put into clean vessels or the same barrel may be washed out and used.

Vinegar From Apple-Parings.

A product as good as the best cider-vinegar may be made from the parings of apples and peaches as well as grape-pulp. Put these parings into a barrel or stone jar and cover with rain or cistern water. A galvanized or tin vessel is not suitable as the acid will eat off the coating. After it has been in this vessel for several days or until fermentation sets up, and before the parings begin to soften, strain off the liquid part into a barrel or even into a barrel containing some old vinegar or some made by the above process. This will make vinegar quicker than pure cider, and the addition of molasses and water will make it stronger. A little vinegar "mother" will always help in the making. If it should chance that one hasn't the apple-peelings, an apple flavor may be given to vinegar by boiling some dried apples, pouring water over them and allowing to stand a day or two; then strain off and add to the vinegar. By saving the parings and rinsing all vessels containing honey, molasses and sugar syrup with clean water and pouring into the vinegar-barrel, almost any housewife may have vinegar of the best quality.—Green's Fruit Grower.

FAKE NURSERYMEN.

California has been comparatively free from fake nurserymen and has a large number of most reputable and responsible men in the nursery business. The standing of these men is easily determined and safe dealing should be the rule with the buyers. But a subscriber sends us a clipping from which we take the following which shows that in Washington and Oregon a condition obtains which calls for a close watch on the part of orchardists:

"The company which I had experience with had its head office in Denver, Col., and had been doing business in Idaho, Washington, Oregon and Montana for a year or more. They gave references from a Denver bank and also from one of our own Spokane banks, but upon investigation the

Deep Well Pumping For Irrigation.

The past season has demonstrated more than ever the practicability and superiority of the Pomona Deep Well Pumps. It is fully proven that it is possible to lift large quantities of water from very deep wells with a surprisingly small amount of power. It has usually been considered that a plunger pump is only good for a 35-inch stream on a lift of say 200 feet, but the Pomona Manufacturing Company have demonstrated that it is no longer necessary to use a centrifugal pump, with its wasteful usage of power, to get a large quantity of water out of the ground, as this company is manufacturing extra large size cylinders including 12, 13, 14 and 16 inches in diameter, and capable of lifting from 50 to 100 miner's inches of water. Not only that, but they are prepared to go down after it to depths of 300 and 400 feet if necessary.

They have one plant at Claremont where the water stands 390 feet below the surface and the pump has a total lift of 450 feet, delivering 45 miner's inches of water with 60 H. P. on the motor, and doing it easily. There is another plant in Ontario lifting 60 miner's inches 300 feet with a 60 H. P. engine.

The parts below the surface have been so perfected that they are perfectly reliable and are giving as little trouble as it is possible for a machine to do. Other pump makers, noting the wonderful success of the Pomona Pumps, are trying to imitate them, promising something just as good, but they are only imitators and have not the knowledge or ability to make their claims good.

The Pomona Manufacturing Company has a large plant at Pomona, the only one in Southern California, devoted almost exclusively to manufacturing Plunger Pumps. They are a reliable establishment and are here to stay, to make good their guarantees and to supply your wants in the way of extras or assistance. Their machines and apparatus have been tried out and their value fully demonstrated.

Anyone needing pumping machinery should send to them for catalogs, or visit them in person.

SOY BEAN OIL MEAL.

The manufacturers of "Proteina" Soy Bean Oil Meal are meeting with splendid encouragement from the dairymen and poultrymen of the entire Pacific Coast. This new feed is made from the Soy Bean, grown extensively in China and Manchuria. The bean contains about 18 per cent of oil.

Most astonishing results have been reported from time to time by many experiment stations when testing the feeding value of the Soy Bean. The United States Agricultural Department in Farmer's Bulletins No. 372 and No. 58 makes the following statement: "Soy Beans are more valuable than cotton seed meal as a supplemental feed in the production of pork, mutton, beef, wool, milk and butter." "A bushel of Soy Beans is at least twice as valuable for feed as a bushel of corn."

Many of the leading poultry men claim that "Proteina" is a splendid poultry feed, being rich in protein and egg making constituents. "Proteina" Soy Bean Oil Meal is found to be as good a conditioner as linseed oil meal and produces a glossy coat of hair or feathers without the strong laxative effects of other oil meals.

The Soy Bean Oil Meal during the last two years has also come into general use in large quantities in such dairy countries as Denmark, England and Holland, where it is fast becoming the most popular feed stuff.

Spokane bank said that they knew nothing of the party. The contract read that they agreed to set out 70 apple trees per acre, care for, prune and replace all trees dying within a period of three years for $35 per acre, or 50 cents per tree.

"One of their agents came to me in March, 1910, and said that he understood that I wanted some trees. I told him that I was not financially able at that time to purchase them and he replied that he was the general agent for the company and that if I wanted trees he could give me a splendid contract on some pear trees, so I ordered 464 pear and 225 apple trees, the pear trees not to be paid for until they bore fruit enough to pay for themselves.

"They took my note for the amount at 6 per cent and started to make deliveries last spring. The president of the company came here to oversee the delivery and as the general agent had written me a contract on the back of my note I showed it to him and asked him for one of his regular contracts with the special agreement in it.

He refused to give it to me and I told him that unless he did so I would refuse to accept the trees. He then made me a proposition that I take up my note for $200 cash and they would give me a regular contract in which they would agree to set out the trees, prune and care for them for a period of three years. I accepted the proposition and along in August I took an invoice of my stock and found 325 pear trees and 88 apple trees dead. I notified the company by mail, but they did not answer and I wrote again and sent the letter by registered mail and it was received by the president of the company on the 6th of September, but notwithstanding they have entirely ignored me."

The trouble in this case is that the grower was "easy." He needed a little California ginger which would have impelled him to look up such a proposition before, not after.

DOMESTICATED ANIMALS AND PLANTS.

Some months ago the Cultivator had occasion to review "Principles of Breeding," by E. Davenport, professor of Thrematology in the University of Illinois. The same author has just published, through Ginn & Co., of Boston, a modification of the "Principles of Breeding," or a treatment in a more popular way of a subject which is but little understood.

The aim of this work is to stimulate a widespread interest in domesticated animals and plants—to account for their origin, describe their life in the wild, explain their appropriation by man, show our dependence upon their services, state clearly the methods and principles of their further development —and, incidentally, to explain heredity in such a simple way as to bring within the range of the young student and the general reader the main facts of transmission, applicable alike to plant and animal improvement, and to human relations as well.

The book is divided into two parts, either of which is complete in itself. Part I constitutes a brief course covering the essentials fundamental to the understanding of hereditary transmission and of the possibilities of plant and animal improvement. Part II has to do with the origin and a bit of the history of domesticated races and the manner in which they have been brought from their wild state to be the servants of man.

CUTTING BACK OLD PEACH TREES.

After the lapse of three or four years, unless peach trees have been carefully pruned every year, they are generally of a straggling appearance, without bearing wood only at the extreme ends. This is not desirable, and with proper management need not be. However, when trees are in this condition they can be made as good as new by a good pruning when they are dormant, say toward the approach of spring. Saw them back to near the lower ends of the branches, when new shoots will follow, resulting in trees full of vigorous young shoots. When the cutting back of all that appear to require it would result in the loss of a crop the season approaching, there may be a compromise in pruning. Instead of cutting back all the limbs, take the worst only, letting the rest go until the year following. The appearance of the tree would not be as good as it would were all the limbs cut back at the same time, still the getting of fruit is of more consequence than the appearance, oftentimes. To prevent trees getting "long-legged," as gardeners call it, is easy. In summer, when the growth of shoots is being made, go over the trees, nipping off the ends of those that seem growing out of line. A pinching back of the shoots that need it causes the side buds to break the tree thus making a symmetrical tree and one from which the fruit is easily gathered. It is shaped in this way easier and quicker than when growth is let form as it will, trusting to the knife to set matters right later; and this applies to all trees as well as to peaches.—Practical Farmer.

BORERS.

Answering a query as to eradication of borers, an Eastern exchange says:

There is no successful remedy or cure for trees once badly affected except to drill the borers out with a gimlet or slender wire. We have, however, been inquiring among foresters and tree men for some good preventive which might keep the pest from spreading and in time, as the grubs die off, work out their extermination. One man whose trees had been affected by borers gives the following treatment which he has followed for the past three years. To a solution made by dissolving one pound of hard soap in two gallons of water add one pint of crude carbolic acid. The solution should be heated to the boiling point when the carbolic acid is added. Take one pound of slacked lime, thin it with a gallon of water and add a little Paris green to it. Then mix these two solutions thoroughly and with a spray pump or scrub brush apply it to the trunks of your trees the last of May. Repeat the operation in a couple of weeks. If this wash is applied to the trunks of the trees at this season of the year it will prevent the laying of eggs on the trunks and consequently no borers will be hatched to drill their way into the trees.

Do not allow the fruit to stand in the sun, keep the fruit out of the rain after it is picked and do not pick fruit right after a heavy rain or during rainy weather. Don't pile the fruit in the fields. Use lug boxes for removing the fruit from the orchard to packing house.

WRITE FOR CATALOGUE AND PRICES

Trees: Book orders now for the following standards.

Peaches: Tuscan, Orange, Phillips, Levi, Foster, Triumph, St. John, Early Crawford, Elberta, Muir, Lovell, Fay-Elberta, and Salway.

Peaches have paid growers more profits in the last 25 years than any other fruit.

Apples: Alexander, Red Astrachan, Gravenstein, White Astrachan, Jonathan, Rome Beauty, Spitzenburg, Bellflower, Newton Pippin, Grimes Golden Pippin, Ortley, McIntosh Red, Winesap, Wagner, Winter Banana, Arkansas Black and many others.

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Cherries: Black Tartarian, Bing, Black Oregon, Black Republican, Royal Ann, Lambert.

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The Ornamental Garden

CUTTINGS.

A cutting is a part of a plant removed from the parent and placed under conditions favorable for growth. It may be either a leaf or stem of active, growing tissue, or it may be a stem or root of inactive or dormant tissue. In either case it should be of healthy material; it should contain prepared food (starch, proteids and oils), or tissue capable of preparing plant food, and it should contain one or more buds or growing points.

All cuttings require a moist, warm atmosphere and a porous soil, in some cases warmer than the air above it. Plants differ greatly in the amount of heat and moisture necessary to induce root formation from cuttings. Many hard-wood dormant cuttings will grow readily out of doors, but cuttings of most plants strike root better if the air can be kept cool and the soil warm, with plenty of moisture in both until the roots form. A shallow earthen vessel filled with sand, placed in the living room and kept moist will answer the purpose very nicely for starting cuttings of many of the common flowers and ornamental plants. The common manure hotbed will give good satisfaction in starting most plants both from seeds and cuttings. These are made by digging a pit eighteen to twenty-four inches deep in a well-protected and well-drained location. The pit is filled with fresh horse manure that has been thoroughly forked over and is starting to heat. While filling, the manure should be packed or tramped solidly. A frame or box without a bottom and with one side higher than the other is then set over the pit with the low side toward the south. From four to six inches of sand or sandy loam is placed over the manure, and after the heat has fallen to 90 degrees F. the seed or cutting may be placed in the soil. The frame is covered with a glazed window sash sloping toward the south.

In propagation from green cuttings, healthy, vigorous, young shoots are taken from one to three inches in length. The leaf surface is reduced by removing some of the leaves, entirely or in part. This is for the purpose of lessening the loss of moisture from the part before the roots have formed to absorb nourishment from the soil. The large end of the cutting or the end that grew nearest the body of the parent, should be placed in the soil from one to two inches in depth. The cut should be made at, or near, a node or joint, because roots usually form more freely at this point. As soon as rooted, the cuttings should be transferred to a rich soil from which plenty of plant food can be secured. Geraniums, carnations, chrysanthemums, roses and many other plants are propagated from the growing stems.

The begonia and many other plants having thick, fleshy leaves with large veins or nerves are frequently propagated by leaf cuttings. After cutting across the principal veins in several places, the whole leaf may be pegged or weighted down to the sand in the cutting bed and new plants will spring from the wounded points. The leaf may be split along the mid-rib and the edges placed in the soil. The may also be cut into triangular pieces with the point extendinng into the mid-rib and placed in the soil, point downward.

The currant, gooseberry, grape, lilac and many others readily propagate from hard-wood cuttings. These should be taken in late fall and early winter, tied into bundles of convenient size and stored over winter in a cool, moist cellar or buried in the soil below the frost line. They should be from six to ten inches in length. In the springtime they may be placed in the greenhouse, the hotbed or out of doors in a rich, loose soil. It is usually best to rub off all the buds except one or two at the top, otherwise more than one stem may be secured. This is especially true of shrubby plants, like the currant and gooseberry. The cuttings are placed upright or slanting in the soil and only one or two buds should be allowed to show above ground.

Certain plants are frequently propagated by root cuttings. These are taken in the fall after growth ceases, cut up into pieces from one to three inches long, and packed in boxes with alternate layers of moist sand. The boxes are stored in a cool, moist cellar until spring, when the roots are placed in the propagating bed or out of doors in furrows about one to two inches deep. Both roots and leaves arise from these small pieces. Roots the size of a lead pencil are considered best. The blackberry is aften propagated in this way.

While tubers are simply thickened roots or stems, tuber cuttings are so unlike ordinary stems or root cuttings that they deserve special mention. The most common tubers are the Irish and sweet potatoes. The Irish potato contains eyes or buds and they are cut so that each place will contain one or more of these growing points. Roots rarely spring from the tubers themselves, but from the base of the new shoots. These new shoots may be removed and transplanted, and new ones will arise from the tuber. Three or four crops of sprouts may be obtained from the same tuber. While this is rarely ever done with the Irish potato, it is the common method with the sweet potato. The tubers of the latter are placed in the hotbed either whole or cut once, the long way, and placed in the soil with the flat side down. Shoots arise from the skin of the tuber at almost any point. Cuttings of the stems of tuber-producing plants will often produce tubers instead of roots. These tubers must then be planted to secure a new plant.—Ohio Agricultural Bulletin.

There is nothing more charming than a well-designed house surrounded by a fine landscape, particularly when the two are harmoniously united by artistically treated grounds; and of the essential features of home grounds none is so important as a beautiful lawn.

The Hamilton Sugar Factory manufactured 150,000 sacks of sugar this season. Last year's output was 93,000.

Garden and Field Crops

STRAWBERRY, QUEEN OF AMERICAN FRUITS.

The strawberry, the queen of fruits, is a native of both America and Europe. The early colonists found it growing in abundance throughout those portions of this country early settled, and there are records of the discovery of berries in the meadows which were found one-half inch in circumference, and bushels of them that were from three to four inches. It would appear from this that the large sized berries have not been entirely the product of cultivation.

Roger Williams mentions that they were one of the fruits growing naturally and abundantly in those parts and a learned doctor of England was wont to say that God could, but never did, make a better berry. Sometimes they were so abundant in the early days that they could be picked by the bushel.

Cultivation began in Europe early in the seventeenth century, and the berry responded freely to the improved opportunities to develop, but it was not until later, when berries were introduced from Virginia and Chile, that they really flourished as they might do.

The strawberry is of the same family as the rose, but the fruit is not the fruit at all. It is like the fruit of the rose turned inside out, and pips or seeds are carried on the outside of the pulp instead of the inside, as in the case of the rose. The cultivation of the berry has increased the quantity of the pulp and the flavor has been improved, but the nature of the berry remains the same as it has been through all the ages of its existence.

The Chilean berry was taken first to California and from there distributed through the country. The same berry was taken to France, but it was not hardy enough to stand the climate of the British Isles. From this Chilean berry crossed with the native varieties has come the most famous of the present cultivated berries.

Some growers incline to the belief that the wild berry has imparted none of its characteristics to the cultivated sorts, but others say that the wild berry has made the cultivated berry hardy, and there are those who declare that the wild berry is responsible for the excellent flavor of the present cultivated sorts. Of course, questions of this sort are more for the discussion of horticulturists than for the layman. Perhaps the average person is more concerned with obtaining a sufficient supply than he is with their origin.

The quantity of strawberries produced increases. And the consumption outruns production. In a city like New York, for example, the berries are coming throughout every month of the year, with the possible exception of November and maybe October. But there are strawberries from the South for Christmas, and by this time it is possible to buy them in as large quantities as may desired at relatively reasonable prices.

During the summer it is not unusual for one hundred cars to be received and distributed in New York daily. As many as one hundred and twenty-five cars have been received in one day and distributed before night. This indicates in some degree the enormous demand for them.

They begin to come from the distant South early in the year, and the march is steadily northward, ending in New York State in August. They are shipped in small baskets holding one quart each, packed thirty-two in a crate, and arrive in excellent condition. The grower gets something like 3 cents to 4 cents for his berries at the field side. The consumer pays as high as 25 cents at times, though of course not when the season is at its height. The hothouse berries, which come first, sell at high prices. It is not unusual for the first arrivals to sell for $1 a quart, though, of course, that high range of values doesn't last very long.

Even though the cultivated berry is consumed in such enormous quantities, it never quite compensates for the delicious dew-kissed wild berry which is buried deep in the grass of the meadow. The flavor of that berry once enjoyed will never be forgotten, and will always be used as a standard for judging the berries which grow in the gardens. The little barefoot boy with his lips of red made redder still, kissed by strawberries on the hill, knows of secrets which the city dweller will never discover, and his standard of strawberries is so much higher than that of the city consumer that it will never be the same.—Grocers' Criterion.

POTATO STORAGE.

Each year the storage of potatoes is becoming a subject of greater importance. The object to be aimed at in storage is to keep the potatoes at as low a temperature as possible without freezing, and at the same time keep the surrounding air as dry as possible. Potatoes should be pretty ripe when harvested, as skin-lip potatoes turn black, do not keep well, and are unattractive when exposed for sale.

I was once talking with a friend who was going to leave the country. He said that in an old tunnel I would find some supplies, including 12 sacks of potatoes, which had been put there two years before, and which I might have. The condition of these potatoes was apparently the same as when they were dug; they were not shriveled, no shrinkage was apparent, the eyes were not swollen, and when cooked they were just as edible as when dug out of the ground. There had been an air shaft constructed at the end of the tunnel and through the tunnel was a good current of dry air. The temperature was about 40 degrees F. When the writer came to build a potato cellar he tried to get as near those conditions as possible.

The cellar is 50 by 200 feet. At each end there is a dead-air space of about 10 feet in the form of a vestibule between the outer and inner doors which affords protection from freezing. There is a driveway clear through and on either side the bins are located, skylights and ventilators being placed every 10 feet. The temperature of the cellar may be lowered by opening the doors and letting a current of air pass through.

One important point in the storage of potatoes is to reduce the temperature to as low a point as possible directly after the product is stored.—Bulletin 306 U. S. Dep. Ag.

Plant Bulbs Now!

Right now is the time to plant flowering bulbs. In the hot house they will flower for Christmas. In the window box or garden they will be ready to blossom in the early spring. Plant a few bulbs in your garden now and you will have a profusion of most beautifully colored and most fragrant of flowers, a typical California garden.

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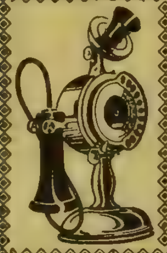

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________________1910

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115 No. Broadway, Los Angeles, Cal.

Gentlemen—Enclosed find $_______for which enter new subscriptions as follows, to begin at once and to expire Jan. 1, 1912.

NAME	P. O. ADDRESS	STATE

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Bees and Their Care

RHEUMATISM AND BEE-STINGS.

I have been instructed, amused and depressed as my mind has been played upon by the various references I have seen in professional, miscellaneous, news, and special journals upon bee-sting poison and rheumatism. I have experienced these different mental modalities as sense, nonsense, and ignorance are exposed by the various writers. I am not an expert in the ways of bees nor in the production of honey. I am only a country doctor who studies among other subjects of routine, "rheumatism." Any one who is looking for a cure for rheumatism is searching for what he will never find. One who is looking for a relief for his own rheumatism may find it.

The old-fashioned notion that there is a cure for a disease—i. e., that a disease, separate and apart from its peculiar manifestations in the person who has it, has a medicine that will operate curatively, is no longer held by any one who has a comprehension of the nature of disease and the action of remedies. Diseases manifest themselves differently in different people. In one, so-called rheumatism manifests itself in one way; in another person its manifestations are as different as if due to another cause. Some have the pain located in the back, others in the trunk, some in the small joints, others in the large ones. In some the pains are muscular; in others they appear to be in the tendons and sheaths of muscles. In some it hurts all the time; in others pain is periodical, or aggravated by particular conditions. Some have fever with rheumatism, and are sick abed. Some have heart-valves and heart muscle involved. Some can not move; others are so restless they can not keep still. Now, to relieve the particular manifestations of the rheumatic affection a remedy must be selected that corresponds to the individual's case. Every person has his own individual rheumatism. Be the aggravation in his heart, general muscular system, tendons, sheaths of muscles, joints, or where it may be, it is affecting him differently, and he is a different "rheumatic," just as he may be a child, a grown-up person, one with good habits, is afflicted with other taints, is rugged or weak, plethoric or anemic, exposed or well housed, confined to bed, or impelled to move about for relief, etc.

Physicians no longer prescribe medicines for diseases. They prescribe for the sufferer who has the disease and dispense the remedy as indicated by the signs and manifestations in his particular case.

The actual cause of rheumatism is not known; but it is known not to be uric acid. Uric acid may be the cause of gout, but not of rheumatism. The opinion generally prevails among scientific physicians that rheumatism is a germ disease, although the exciting microbe or microbes have not been satisfactorily identified. Some rheumatics are relieved by salicylic acid, some by aconite, some by one remedy some by another. There is no specific for it. Consequently, if bee-poison will relieve a form of expression that rheumatism may take, it is foolish to expect it to relieve all, any more than salicylate of soda will relieve all.

There is a type of rheumatism, or rheumatic-like ache and pain, that will be relieved by apium virum—the poison of bee-stings. The kind of joint and muscle aches and pains that will react to the bee-poison is that accompanied by local dropsical swellings about the parts affected. The skin around the sore spot is waxy and pale in appearance. The urine is usually scanty. The pulse is quick, hard, and small in severe cases.

Many cases of heart involvement with fluid in the "heart-sack" yield to it. The synovial (or joint) membranes are particularly frequent seats of the swelling that will respond to this treatment.

The cases of rheumatic-like states that will be relieved by the bee-poison are not the most common kind by any means. That is the reason that all who are afflicted with the ailment are not relieved by the treatment. Those cases that have been reported as cured or ameliorated have been the ones to which the poison is remedial; those that have not reacted needed some other kind of remedy, which may or may not have been one of a dozen.

The virus of honey-bees is a commodity in the drug market, and it is to be had from pharmacists for dispensing. It has its indications in the therapeutic field, and is in the armamentarium of hundreds of physicians. Those who know how to use it, and who understand its clinical indications, rely upon it with as much confidence as is to be reposed in any drug. I believe that there are dealers in and producers of bee products who can tell something about "orders" from pharmacists for raw material from which the remedy is produced.—Gleanings.

One of the first difficulties facing the beginner will be the diversity of system and management amongst the different beekeepers. He will find himself compelled to follow some distinctive line or system of beekeeping, and having decided this point, he will concentrate his thought, his reading and experimentation toward the development of his own selected system. Few books, and but a few writers can be wholly followed, and many a writer from whom we expect to learn nothing may often give us very helpful truths, and truth, however useful, can not be of much benefit to the reader until fully digested and made his own. The value of our reading is measured by the correctness of our judgment appropriating or rejecting what we read and the measure of our success in anything is dependent upon an unerring judgment and prompt execution.—Coleman's Rural.

The chief excellence of the modern hive is in the movable frames which are fitted with a groover, so that when the hive is opened the frames containing the combs can easily be removed, the combs examined, changed in any way the beekeeper pleases, and returned quickly.

Bee-keeping, if carried on intelligently, is as certain a business as any.

Live Stock and Dairy

Dairymen and stockmen are requested to write of their experience. Mrs. Sherman is always willing to answer queries and this, with experience of other workers, will make this department of greater value.

MODERN DAIRYING.

By Mrs. M. E. Sherman.

The prices of milk and its products naturally are rising with other food stuffs. When one class of food prices goes up the thrifty housewife buys some other article to supply its place. This makes that article a paying proposition and at once its price is put up too. Cows are sharing the general rise in values of beef cattle. The dairymen are receiving ten and twenty dollars each for heifer calves a few weeks old if the dams are reasonably good cows. These heifers that used to go to the butcher are now being raised for cows to sell to the dairymen. The high prices of common stock have brought the dairymen to the point where they see that the registered pure-bred cows will be more profitable to handle.

Prices.

A sale of mixed cows and heifers in San Diego county brought an average price of sixty dollars a head. The owner now goes East to buy registered stock and enter the ranks of breeders. At another auction sale in the San Joaquin Valley the animals averaged seventy-five dollars a head. This is even more remarkable as cattle are usually cheaper in the Great Valley than in Southern California. The pure-bred animals on the farm usually appeal to the owner and receive more care than common cows. They are intensely interesting and no one knows how much pleasure there is in breeding livestock except those that have experienced it. Every calf in the herd represents a new individual and its points are studied with the greatest interest. The cropping out of strains of ancestry is marked in animals. They carry the form and style often of their grandparents.

Scientific Breeding.

The day has passed when the farmer is satisfied to go at things in a haphazard way. He is studying and working all the time to make things better on the farm. The pure-bred cow not only appeals to his mind but she appeals to his pocket book. She pays in dollars and cents every day. She milks more than the average cow; she gives a heifer that is as good as she is to continue the good work of the herd. Her son also will transmit her good qualities to all his offspring. The study of inheritance and the transmission of acquired traits is one of the most profound of all and one of the most absorbing. Animals like plants throw sports of greater excellence and it is by studying the performance of the entire herd that the extra producers are found and used to build up the herd. Their accidental or perhaps it would be better to say the actual balance of all that is good that holds them to superior performance is transmitted. Balance of physical with the mental qualities holds good in animals as well as in the human family when high performance is to be secured.

Shipping.

The shipping in of fully matured animals to California from the East is not always an immediate success. The disappointments often have led men to hastily condemn the breeders. The animals must have time to become acclimated before they do their best. The first noticeable change is the fact that the first year there is a lack of breeding powers. In the horse and other males the first year's offspring are often very few in number. The next year the power of reproduction returns. It is not well to condemn an animal before a complete change of seasons has gone around. The male creatures seem to suffer from the contact with mankind in the closeness of the cars and in the nervous tension of loading and unloading. Their lives have been quiet ones and the excitement of the train makes them wildly nervous. Then when they reach California they meet different conditions of food and climate, all of which must be overcome.

Unloading.

The humane law requires cattle to be unloaded every forty-eight hours. This means as soon as they grow accustomed to their quarters in a stock car, the law comes in to thrust them out into a miry unsanitary yard. They are hustled out often to stand in the rain or in the snow after coming from a warm car. The law is a good one in that it overcame the brutal shipments of beef cattle. These animals were packed into the cars as closely as possible for beef was cheaper than car space. Some laid down and never had a chance to regain their feet before their lives were trambled out of them. Without water or feed they remained often for several days. The dairyman bringing fine stock out to the Coast has to conform with the law even if the cattle only half fill the car and if they have abundant room to move around. The attendant traveling with them sees that they have water and feed at all times. It is a good law for unattended cattle but it is somewhat vexatious to the handlers of fine stock.

Buying Calves.

This necessity of the older stock going through a period of acclimatizing has resulted in a large trade in shipping calves by express. It is really the best way where only a few head are needed. The fancy bred young sires come through in good order at four or five months old. These little ones cost from seventy-five dollars up to five or six hundred according to breeding. The expressage is about seventy-five dollars a head from middle western points, one hundred from middle states and a little higher from the seaboard states. Many of the eastern breeders will guarantee safe arrival. All that I have ever sent for have reached here in good order and been satisfactory. Spring and fall months are the best time to ship as the animals escape taking cold on the trip.—M. E. Sherman.

Anthrax Cure, Milk Fever Outfits. See O. J. Weber Co., 225-227-229-231 East Sixth street, Los Angeles.

The Glenn County Cold Storage and Creamery Company is putting in a big plant at Willows. It is hoped to begin operations by January 1st.

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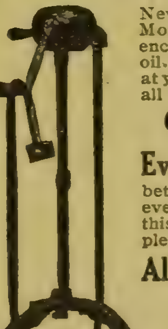

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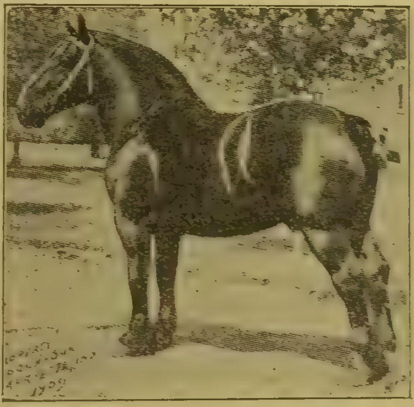

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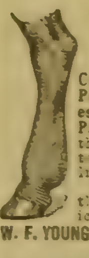

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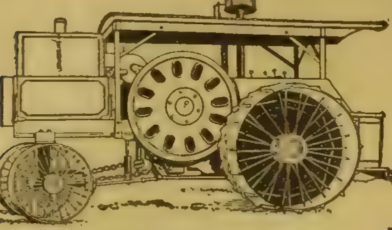

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EDUCATIONAL BUTTER SCORING CONTEST.

By Herbert A. Hopper.

The inspection of the sixth entry to the current year's contest, scored November 21, disclosed the presence of a more uniformly high scoring lot of butter than has previously been sent to any of the California scorings. This can be seen from the fact that the lowest score was 91, and the highest 95; and the entries submitted represented, as usual, butter manufacturing conditions over a large part of the state. The marked improvement shown in the butter submitted at the last two entries, in spite of adverse seasonal influences, is a matter of great satisfaction, and emphasizes as nothing else does the part the "contest" has played in helping several butter makers to make the most of their efforts.

Score of Sixth Entry.

California Poly. School Creamery, San Luis Obispo	95
Ceres Creamery, Ceres	94½
Univ. Farm Creamery, Davis	94¼
Santa Ysabel Creamery, Paso Robles	94
Castroville Creamery, Castroville	94
Salinas Creamery, Salinas	93½
Pioneery Creamery, Ferndale	93¼
Standish Creamery, Standish	93
Dairyman's Co-op. Creamery, Tulare	92¼
Bodega Creamery, Bodega	92¼
Suisun Creamery, Suisun	92
Visalia Co-op. Creamery, Visalia	91

Summary of Contest, 1910.

Highest average score, 93.95, University Farm Creamery, Davis, Cal. (not competing). The prize cups were won by:

1.	Simon Koppes, Ceres	93.41
2.	Ira King, Ferndale	92.95
3.	A. Jensen, Castroville	92.87

The special prize cup for improvement in methods and quality was won by J. H. A. Jorgensen, Salinas, 92.80. The total value of cups presented was $165.

Certificates of Merit.

E. H. Hageman (Univ. Farm)	93.95
Simon Koppes	93.41
N. J. Beck	93.30
Ira King	92.95
A. Jensen	92.87
J. H. A. Jorgensen	92.80
M. Resendes	92.79
F. T. Aitkin (Calif. Poly. School)	92.75
L. Hansen	92.45
V. Baciarini	92.08

The desire is to continue the contest, beginning early in 1911. At that time announcement of the plan will doubtless be made through the dairy press, and all suggestions regarding the same should be sent in early. In the meantime, buttermakers should prepare to support this enterprise to their utmost ability, as it is conducted entirely for them. The support which they give determines the success or failure of a lot of hard work.

CERTIFICATION OF RECOGNIZED BREEDS.

In order to enforce more thoroughly the provisions of the tariff law, instructing the Secretary of Agriculture to "determine and certify to the Secretary of the Treasury what are recognized breeds and pure-bred animals," as a basis on which customs officers may determine what animals may be passed through the customs free of duty for breeding purposes, the Secretary of Agriculture has revised the regulations on the subject.

In order to be entered free of duty all animals imported into the United States by citizens of the United States for breeding purposes on and after January 1, 1911, must be accompanied by certificates of the Bureau of Animal Industry that the animals are purebred of a recognized breed and duly registered in the foreign book of record established for that breed.

The new regulations will be published within a few days, and this statement is being distributed to give importers of breeding animals and others concerned ample notice of the matter. These regulations do not modify or change in any respect the regulations now existing relative to quarantine restrictions on account of contagious diseases. Persons intending to import animals for breeding purposes after January 1, from any foreign country where quarantine regulations of this department permit such importation, should apply to the Bureau of Animal Industry for application blanks for official certificates. The use of these blanks is necessary to enable the department to have full information concerning each importation.

The new regulations supersede B. A. I. Order 136 and its amendments, and have been drawn with the greatest care. The breeds certified are the some as under B. A. I. Order 136, with a few exceptions. Animals registered in the Canadian National Records will be certified for several breeds, where the provisions of those records are in harmony with the rules of the American books and the policy of this department. The list of certified British breeds remains practically intact. On the continent of Europe Percheron, French Draft, and Belgian Draft horses, Friesian, Netherland, and North Holland cattle, and Swiss and Belgian dogs are certified.

All American books of record are omitted on the ground that the provisions of the law under which these books have been certified in the past do not give the department authority to certify studbooks and similar publications in the United States.

Under the new regulations each foreign pedigree certificate will be carefully examined in the Bureau of Animal Industry and the animal itself will be inspected to determine whether it is the identical animal described in the pedigree certificate.

SOMETHING ABOUT MILK FEVER.

Although milk fever does not cause the death of nearly so many cows as before the use of the oxygen treatment, there are stil many good cows lost from this disease. Few farmers, comparatively speaking, own a milk-fever outfit. Fewer still have gumption to improvise one; still others do not watch their cows so closely at freshening time that the disease has not made great progress before it is discovered, and by the time a veterinarian can be summoned the cow is dead. The farmer with the herd of poor milkers is exempt from the disease. It attacks always the cow that gives a good quantity of rich milk.

Milk fever begins to show itself usually in about twelve hours after the calf comes, and the first symptoms are simply a refusal to eat and a general uneasiness. Usually the cow keeps up a gentle lowing, easily mistaken for the sound many cows make to a new-born calf. In a few hours the cow loses the use of her limbs, gets down with head around on her side, and becomes unconscious; death en-

Cream Separators, all sizes and prices. O. J. Weber Co., 225-227-229-231 East Sixth street, Los Angeles.

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Charges for Soil Work

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Mechanical Analysis (five grades of fineness)	$1.00
Lime and Magnesia Determinations (available)	1.00
All the above with Phosphoric Acid, Chlorine, Alkalinity, and approximate Humus	4.00
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SAMPLES—Take surface sample from first foot: subsoil from between 2½ and 3½ feet depth; deep subsoil from between 7 and 8 feet depth. One pound is enough for a sample if well mixed before dividing down. PRICES—These prices are in force only while advertised.

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sues in a few hours more. If taken at the start, little treatment is necessary to arrest the trouble. Fill the udder with air—I have heard of its being done by blowing with the mouth through a milking tube—then tie the teat with a piece of soft tape or cloth to keep the air in. This will usually arrest the disease; it is not too late after the cow is down and seemingly unconscious.

The best course is to summon a veterinarian as soon as the cow is discovered, but if she is bad get air into the udder by some means if possible before he comes. This will arrest the disease omewhat, and he will have a much better chance to raise the cow. He will doubtless combine the oxygen treatment with a course of medicine, and if he is good at his business, you will lose little of her milk, although she will doubtless shrink in milk somewhat.

I know two cases this past summer to come on after ten days of milking. The cows were extra good ones, were in good pasture and fed heavily on mill feed. The veterinarian said he had never had such a case after so long a period of milking, but the symptoms were the same—the cows down and seemingly nearly gone—so he gave them the milk-fever treatment and both recovered. Heavy feeding was the cause, in his opinion.

The best way to treat milk fever is to prevent it. While a cow should be well fed previous to freshening, she should not be fed on too concentrated food. Good hay, bran, a little oil meal, some potatoes or other roots to keep her bowels free, and exercise every day, make the proper regimen. At freshening, do not milk all the milk out of the udder for the first few milkings. These precautions will bring them in all right. Many people think a cow that has had this trouble once is very likely to have it again. I nearly lost a good cow with this disease. I kept her several years, feeding as above described for a month before freshening, and had no further trouble with her.

Any extra good cow is predisposed to parturient apoplexy or milk fever by virtue of the excess of butter-fat that she produces, and should be looked after both before and for some 12 to 24 hours after freshening. Oats are a good feed for freshening cows, and many farmers feed all a cow will eat, believing them a preventive of the ailments peculiar to freshening.—Country Gentleman.

A number of raisin and fruit growers near Fresno have formed a drainage district covering 55,000 acres. It is hoped the work can be done for about $4 per acre.

SWINE FEEDING IDEAS.

Ever since we saw the remarkable experiment carried on at the Wisconsin Experiment Station, showing the effect on three pens of pigs of (1) ordinary feeding; (2) ordinary feeding with the addition of a small amount of phosphate causing that pen of pigs to show unusual vigor and strength; (3) taking out all natural phosphate from the food of the third group of pigs, showing very disastrous effects in their growth, we have felt the conviction that the mineral elements of food had a great deal to do with bodily growth.

The Missouri Experiment Station has been at work on this problem and has brought out some valuable ideas on pig feeding. The work of the station has solved a few questions clearly. (1) Why does a corn diet produce a deficient growth of bone? Answer: Because corn contains too little ash and phosphate.

That was what the Wisconsin experiment plainly showed. But all the valuable experimental work of the stations will be useless if their conclusions do not get out into the conviction of the farmers. It is a slow process. The knowledge must be put out through printed knowledge; but few farmers as yet read these things understandingly, although their number is increasing through the young farmers who attend the short course.

The spread of this valuable knowledge must come through example, here and there a farmer who reads and puts into practice what he reads thus demonstrating its truth. The Missouri experiment had to do with several kinds of rations such as corn fed by itself, corn fed in combination with the following feeds: tankage, soy beans, germ oil meal, wheat middlings, linseed oil meal.

Each combined ration had the same nutritive ratio, but the effect on the hogs was widely different and here we come to the kernel of the valuable truth we can all learn; viz., that we must feed a ration that will stimulate the growth of bone if we wish our hogs to do well. This ration was found to be a mixture of corn and tankage, or corn and oil meal, or corn and soy beans. Here we have plenty of protein and phosphate.

Some may ask why is the growth of bone so closely allied with the general promotion of growth and weight? We cannot say, but we will state the following physiological fact. The red corpuscles in the blood are constantly formed from the bones that have red marrow like the ribs and spinal column. The vitality of the blood is therefore dependent on the proper nourishment of a certain portion of the bony structure. To this end the food must contain sufficient phosphate, protein, and calcium.

Farmers must study the physiology of feeding as well as that of breeding. We know as yet but little of these laws but that little seems to be very imporant if we would let nature help us.—Hoard's Dairyman.

KEEP QUIET.

A man who had purchased a fine-looking mare discovered, after driving the animal for a week, that she was blind. Shortly afterward he succeeded in disposing of her, as the defect did not lessen her speed or detract from her general appearance. The next day the owner of the mare appeared. "I say, you know that mare you sold me?" he began. "She's stone blind." "I know it," replied her last owner, with an easy air. "You didn't say anything to me about it," said the purchaser, his face flushed with anger. "Well, you see," replied the other, "the man who sold her to me didn't tell me about it, and I thought, perhaps, he didnt' want it known."—Country Gentleman.

Fortify your wire fence by placing boards around the bottom. The tighter these fit to the ground the better.

Do your cows milk hard? Send 50 cents for teat expander. O. J. Weber Co., 225-227-229-231 East Sixth St., Los Angeles.

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Galien, Mich., Jan. 6, 1909.
Dr. B. J. Kendall Co.

Dear Sirs: I hesitate no longer in buying horses with Spavins or Curbs, in fact with blemishes of any kind, for I know what your medicine will do. I always make a handsome profit buying such horses cheaply, cure them up with your medicine, and sell them for a grand price. *Your medicine can't be beaten.*

Respectfully yours, JOS. HAAS, (R. R. No. 2)

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1317A Kentucky Ave., St. Louis, Mo., Apr. 23, 1909.
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Yours truly, HUGO KING.

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Established 1889. Twenty-second Year.

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Demonstration Train

The special agricultural and horticultural demonstration train operated under the auspices of the Southern Pacific Company and the University of California started on its tour of the Sacramento Valley last Monday morning. The first stop was made at Lincoln. Other points on the route are Marysville, Oroville, Gridley, Biggs, Chico, Red Bluff, Anderson, Montague, Corning, Orland, Willows, Woodland, and many other cities of the valley.

The equipment of the train includes six cars containing a larger and more comprehensive line of exhibits to be used in illustrating and demonstrating points brought forth in the discussions, answering practically any question which the intelligent farmer or fruit grower may propound.

This is the third year this train has made trips in the different parts of the state. This present trip into the Sacramento Valley is the first of the third series. There will be five other trips, the last of which is from Los Angeles to San Francisco along the Coast Line. The others touch points in the lower San Joaquin Valley, upper San Joaquin Valley, Imperial Valley, Orange county and up the coast. Every line covered in an agricultural discussion from field crops, soils, fertilizers, animal industries, dairy industry, viticulture, irrigation, and on to entomology and poultry, is represented by exhibits. Exhibits in the poultry division will present various appliances and methods of poultry practice, and models of houses and yards will be shown. Home economics has a large exhibit in one of the cars, in charge of a most competent instructor.

The force from the State University accompanying the train consists of President Wheeler, Prof. Clarke in charge of the demonstration work, Profs. Shaw, Woodworth, Hermes, Burd, Lipman, Hopper, Cleghorn, Roberts, Wilkins, Yeaw and Hunt; Mrs. Sherman, Messrs. Packard, Flossfeder, Bryant and Thompson, Dr. Almeida and Miss Van Wormer.

Fake Eucalyptus Business

The Cultivator has never admitted to its columns the advertising of fake eucalyptus concerns which have during the last two or three years been working the gullible in this state. We have noted with regret that some so-called farm papers have not only admitted advertisements, but have joined in the effort to boost the business by setting forth its great profits. The planting of a eucalyptus tree is a worthy ambition and promises a blessing to the planter or his successors, and we hope to see many thousand acres planted to this wonderful tree, but the promises of immense wealth in return for a small investment have induced many who could ill afford it to put money into such schemes—to their certain disappointment and loss. The claims made by many of the promoters are so beyond all reason that the thinking investor has not been caught, but many others, more credulous, have believed and invested. Some of the plantings were made where they frosted down the first year, and some on land so poor that it can never produce a paying crop, much less pay the expenses which the promoters have incurred for handsomely fitted offices.

We note in the Country Gentleman of September 22nd an article by our friend, Mr. John T. Bramhall, in the northern part of the state. He touches particularly upon actual production as shown by measurements made by the forest service, and emphasizes the fact that the claims of great production cannot be proved by any planting yet made in California. From Mr. Bramhall's article we quote:

"The representative of two companies engaged in this business says that he has not seen a single misstatement in any of the literature of the business. His extremely limited vision makes him a valuable witness for the get-rich-quick companies. Passing by the statements regarding yield, how is it with the story so often quoted of the magnificent scheme to plant the line of the Los Angeles aqueduct to eucalyptus and reap a hundred-million-dollar harvest every ten years? That is no misstatement, I suppose? It seems to figure out all right, to be sure. Why doesn't the state of California buy a 500,000-acre ranch and multiply the Los Angeles scheme by ten? It being estimated that there are 50,000 acres in the canal strip, ten times that would be 500,000 acres, and ten times a hundred millions is a billion! Anything the matter with that? Nothing whatever, except that it is based on a lie. I call your attention to the following, from the Bureau of the Los Angeles Aqueduct, addressed to me a short time ago:

"'In reply to yours of June 4th, I will say that the paragraph which you quote concerning the planting of eucalyptus trees by the aqueduct bureau must have been taken from the prospectus of the company which was trying to sell stock in Los Angeles several months ago. The question of planting eucalyptus trees on the ranch property owned by the city in the Owens Valley was discussed in a very cursory manner, but it was never seriously considered, and the statement quoted by you is without any foundation whatever.' This is signed by Wm. Mulholland, Chief Engineer."

A Great Industry

According to figures compiled by Mr. F. H. Snow of Petaluma, that district produces about seven million dozen of eggs per year. This added to the sales of poultry realizes more than two and a half million dollars. This is the best example of poultry industry on a large scale in the world, and while Petaluma has some conditions favorable to poultry culture which may not be reproduced in all sections of the state, yet there is no question but that the industry may receive far greater attention in other districts to the state's advantage.

San Francisco is importing weekly an average of two cars of eggs. By importing, we mean bringing to this state from east of the Rockies. Los Angeles demands practically as much more, and but few sections of the state produce enough for home consumption, yet with this opportunity to meet the demand we would not encourage any to enter the industry in a large way without fullest understanding of its requirements. It is strange that people who would not think for a moment of entering into business or professional life without proper training, think they may leave these callings and go into the poultry business on a large scale with no knowledge of its details. It cannot be said that the industry demands the highest intelligence, but it does demand thorough knowledge, and unless these conditions are met, failure results. This accounts for the vast number of failures which this state has witnessed, for as we have expressed it before, there are more people going into the poultry business and more going out of it than any other. The people of Petaluma have reduced poultry farming to an exact science, and it has brought in much ready money to the community and even developed a great business. Some farms there are operated on an immense scale and the poultry is counted by the thousands instead of dozens.

Sweets as Valencias

It is reported that some shippers have labeled Mediterranean Sweet oranges as Valencias. The matter seems to be in the Eastern papers, and in one we note it has been reported to Secretary Wilson, who suggests that such action is in violation of the pure food and drugs act. It seems that it should not be necessary to invoke the operation of that act in regulating California orange and lemon shipments, but if we have dishonest shippers we will be glad if Mr. Secretary will call them hard. Secretary Wilson says in reply to a letter:

"We have your inquiry regarding the labeling of Mediterranean oranges as Valencia oranges. This, in my opinion, is clearly a violation of the food and drugs acts and if you can give us any definite information as to the parties so labeling, we will be glad to receive same and will take such steps as we are able to prevent this misbranding."

Some time ago the Cultivator had occasion to refer to the organization of a company promoted to handle a fertilizer which, according to experts of the Fertilizer Control at Berkeley, was not of sufficient value to pay for distribution on the land. The steps taken in the organization have not been such that criminal action could be taken, but we had supposed that the fake nature of the concern was so apparent that the wayfaring man might readily discern the danger signals. But only recently we heard that efforts are still being made to finance this proposition. Our informant tells us that he knows of cases where trusting men had put up good money and in one case its return had been compelled because the transaction was so close to criminal that the promoters became frightened. Farmers should look with caution on these offers to be let in on the "ground floor" with these promoters. The bait held out is that members of the "company" will have inside figures when it comes to the purchasing of the stuff which is supposed to fertilize the ground.

In the communication from Sonoma county which appeared in our issue of November 24 the Cultivator representative was made to say that ears of corn 18, 20 and 22 inches around were the rule. This is one of the mistakes of the typesetting machine which was allowed to pass without correction. It is easier to lay it to the machine for then no personal responsibility is involved. However, we regret the mistake very much. The sentence should have read, "Ears of corn 18, 20 and 22 rowed were the rule." California is some on corn as well as everything else she attempts, but 22 inches around is a little big.

An exchange says that the best way to preserve a manure pile is not to have any. Manure produces the greatest benefits when placed upon the ground immediately. One of the best implements on the farm is the manure spreader.

Agricultural News Notes of the Pacific Coast

Northern California

Oroville is shipping an average of about six cars of oranges daily.

Machinery has been ordered for a new ice and fruit cooling plant at Oroville, Butte county.

San Joaquin county ranchers are severely criticising the county engineer and urging his removal.

Decoto public school claims the honor of being the first agricultural school in Alameda county.

The People's Water Company will plant 6,000 acres of eucalyptus trees near Hayward, Alameda county.

Gridley is putting in shape a drainage system which will dispose of much surplus water in time of storm.

The Ehmann Olive Co. at Oroville has greatly enlarged its capacity. This company makes a specialty of ripe olive pack.

The long continued dry season is proving a serious matter for live stock growers and much anxiety is expressed.

Hayward, Alameda county, will begin a course in agriculture in its high school at the beginning of the next school term.

The Oroville Register reports the the passing through that city of carload after carload of live poultry coming from the East to the San Francisco markets.

The federal grand jury recently turned in an indictment against William Longfellow of Oak Bar, Siskiyou county, for wilfully setting fire in the Klamath National Forest.

Granting the request of hop growers near Wheatland, Secretary Wilson will send an expert of the Department of Agriculture to the hop-growing districts of Germany, Austria and England.

The Southern Pacific demonstration train service for this year began last Monday. The demonstration work is in charge of Prof. W. T. Clarke and a corps of instructors from the State University.

The Sacramento Valley Development Association is discussing highways across the Yolo Basin and taking steps to suggest the expenditure of the money from the sale of the $18,000,000 bond issue.

The standardization meeting at Newcastle on the 22nd brought out a big attendance of Placer county fruit growers, who enthusiastically endorsed the season's work and adopted standards for next year's shipments.

The Sutter Almond Growers' Association is running an almond cracker, the kernels having been contracted for by San Francisco firms. The deal was made through the Almond Exchange. These nuts are from the class known as "stick tights."

There is contention between County Horticultural Commissioner Bloomer and Prof. Elmore Chase of Sacramento county as to the manner of treating pear blight and noxious weeds. Prof. Chase maintains that pear blight has not been properly treated under direction of the commission.

Central California

Tulare county oranges are reported sweeter than ever at this time of the year.

Tulare County Citrus Fair at Visalia is attracting great crowds this week.

Persimmon growers at Grangeville, Kings county, found good profit this year in their fruit.

The Empire tract near Hanford has been producing large quantities of alfalfa this year.

Turlock peach growers, who co-operated in the marketing of their fruit, netted $40 per ton.

San Juan, San Benito county, has delivered 218 cars of beets to the Spreckels factory this season.

The convention of delegates to the District Fair Association was held in Stockton Wednesday, December 7th.

The Porterville Creamery is showing just pride in its record of butter scorings in Los Angeles, where it has topped the market.

Improved machinery is being used on the grain farms of Kings county, one of the later additions being a double disk grain drill.

Pajaro Valley has not yet reached the 4000-car mark though it has passed 3500, of which 3160 were shipped from Watsonville.

The Spreckels Sugar Factory handled beets from 20,000 acres, or an aggregate of 215,000 tons with an average of 18 per cent sugar.

Experts of the Department of Agriculture are inspecting various sites for grape experiment station near Watsonville, Santa Cruz county.

Raisin growers at Oleander, Fresno county, have started a movement for the storing of raisins until more satisfactory offerings are made by the packers.

A meeting was recently held in Stockton to take up the matter of a county fair. The Stockton race track has long been known as one of the best in the West.

The Old Mission grounds at San Juan Bautista, San Benito county, are furnishing to the California Development Board for exhibition purposes some fine pears from trees planted by the Spanish padres in 1797.

The California Raisin Vending Company is taking active measures to increase the sale of raisins and is building 1000 nickel-in-the-slot machines for the purpose of street vending. It is hoped to increase this number to 100,000.

Having seen notices in Eastern papers that Thanksgiving mincemeat was high this year on account of the scarcity of raisins, raisin people are inquiring as to the why of the scarcity when they are unable to sell at a living price.

Porterville, Tulare county, is very much elated over the fact that her apples were given prizes at the Chicago Fair, one apple being pronounced by the judges an absolutely perfect specimen and awarded a 100 per cent. mark. It was produced by George Dillon, in the hills above Porterville.

Southern California

Redlands' first Navels were shipped this year on November 27th.

Calexico, Imperial county, has an ambition to have a beet sugar factory.

Orange county's production of beet sugar this year has been 28,000,000 pounds.

Big crowds are attending the Imperial County Fair at El Centro this week.

The Hemet Driving Club recently gave a banquet in honor of its newly elected president.

The Orange County Celery Growers' Association will ship about 2000 cars early in the season.

Winchester, Riverside county, finds a more successful late alfalfa crop this year than heretofore.

The Salton Sea has decreased in depth from 72.3 feet in 1907 to 67.4 feet at its greatest depth.

A rabbit drive between Elsinore and Corona last week resulted in 200 bunnies giving up their lives.

The olive oil mill at Bloomington, San Bernardino county, began crushing about the first of the month.

San Diego is already receiving assurances from foreign countries of participation in the Panama-California Exposition.

Redlands Orange Growers' Association refitted its packing house and now has an entirely new system of packing machinery.

For the first time in its history Riverside county figures as a cotton producer. Its production this year was 125,000 pounds, produced in the Coachella Valley.

Some citrus orchards at Corona, Riverside county, have been found infested with red scale and an effort is being made to eradicate it.

Whittier, Los Angeles county, claims the production of three-fourths of a million dollars' worth of walnuts this year. The Whittier Association is the largest of its kind in the world.

El Centro cantaloupe growers are signing up contracts for next year's melon output. Owing to the amount of land given over to cotton it is claimed the melon acreage will be greatly reduced.

The farmers' institute at Thermal last week, with which was connected an exceptionally fine exhibit of products of the Coachella Valley, was one of the most successful events of its kind ever held in Southern California.

Moreno Valley water company now suplying water for 500 acres of orange land reports a most successful irrigation season. More wells are contemplated which will increase the flow by 200 inches.

The Antelope Valley Gazette reports a fine lot of pistachio nuts produced in that valley this year. These are the first nuts produced in Los Angeles county and are pronounced exceptionally high grade.

Orange county celery growers are anticipating the biggest season ever, the present month being the high tide in shipments. The price now made at Wheatlands is 20 cents per dozen f. o. b. Quality is the best.

The Coast

Eastern Washington was granted a soaking rain during the last of November.

Wheat producers at Pullman are selling wheat rapidly under the increased price.

Filbert growing is becoming something of an agricultural possibility in western Oregon.

Cost of turkeys at Yuma, Arizona, 30 cents live weight, was the lowest for years.

Inspectors have closed several dairies supplying milk to the city of Portland, Oregon.

A meeting has been called at Goldendale, Washington, to discuss the question of good roads.

One fruit buyer has contracted for the 1911 output of Douglas County Fruit Growers' Union.

Walla Walla, Washington, was given a precipitation of over one inch of rain last week.

Apple growers at Spokane are holding their Winter Pearmains of the better grade for the spring prices.

The first full trainload of apples to leave the Payette Valley in Idaho went forward on November 17th.

One shipper has purchased and shipped from Northern Idaho 555 cars of live stock since January 1st.

The Tieton storage project, costing a half million dollars, has just been completed at North Yakima, Washington.

An irrigation company has just completed a dam by which 4,000 acres near Washtucna, Washington, will be irrigated.

Apple growers at Elgin, Oregon, are shipping a car of fancy apples to points in the Middle West for exhibition purposes.

A combine of local buyers of grain at Lewiston, Idaho, has forced down the price until farmers are storing and refuse to sell.

Angora goat men are planning for a great exhibit at the January meeting of the National Wool Growers' Association at Portland.

The Division of Forestry, Department of Agriculture, Hawaiian Islands, distributes trees to planters who will put them out on Arbor Day.

The Indian boys in the farm department of the Chemawa Indian School made success of growing prize potatoes during the past season.

The completion of the Furnish-Coe dam across the Umatilla river at Coe Station, Oregon, will make possible the reclamation of 10,000 acres of rich land.

The sweepstakes winning at the National Apple Show at Spokane was made by a carload of Spitzenbergs grown at Hood River, Oregon. The price consisted of $1,000 in gold and a banner. The recorded score showed 997 points.

The Koa, which is one of the valuable trees of the Hawaiian Islands, is reported to be dying and the Bureau of Forestry has been asked to make an investigation and recommend method of saving the trees if possible.

The worst thing we have to contend with in getting new customers to try

West Coast Egg Food

is the "stuffs" that have been put on the market called "egg foods," largely composed of unsound grains, mill refuse, and cheap, very cheap, Japanese rice bran and such offal. When we once get a trial of "West Coast" we have no further trouble. No such stuffs in ours. We are winning out in great shape by making first-class feeds at prices as low as those "cheap" ones. Try "West Coast" just once. 75-lb. sack only $1.80, or $45.00 per ton. If not sold by your dealer, send to us. Or, if you are distant from Los Angeles and have good grain products cheaper than to ship them in, you can make your own Egg Food as good as anybody's.

Egg-More Booklet

tells you how. It is free. Send for it. Send us addresses of 5 persons in your vicinity who have fowls, and we will send you an Anchor Egg Separator. Or, for 20 addresses, we will also send The Poultry Manual, a book well worth 50c, both postpaid.

West Coast Mill

Office and Salesrooms, 115 Winston St.
Los Angeles, California

Coulson's

EGG FOOD

If you were going to erect a large building, you would consult an architect—if you wanted some legal papers drawn up, you would go to a lawyer—because these men have made a special study of their respective professions.

The same principle applies to the feeding of your chickens. Presumably you have not the machinery or formula for making an egg food so that it will be just what your hens need.

That's why you should buy COULSON'S EGG FOOD. It is the result of years of study—it is scientifically mixed by experts with the right proportions of the various ingredients to give a balanced ration.

COULSON'S EGG FOOD means a healthy stock, with great laying powers and eggs of quality. Saves you the time of mixing—provides a better feed—makes more eggs—means more profit, as COULSON'S EGG FOOD more than pays for itself, through making hens lay to their full capacity.

It is especially advantageous to use it at the present time, when the price of eggs is beginning to increase, and when also you are anxious to have your hens in good condition for the molting season.

Hens eat only what they like, but there are many foods they must have, and which must be mixed with their regular food so that they get the desired quantity. The only way the food can be mixed is by improved machinery—that's why you should feed COULSON'S EGG FOOD.

Get it at your dealer's; anyway send for our Catalog which tells about the famous Coulson products and gives valuable information about Poultry Raising.

Coulson Poultry & Stock Food Co., Petaluma
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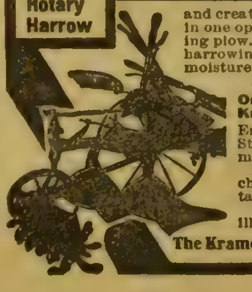

and create the perfect Seed Bed in one operation. Fits any riding plow. Saves all the labor of harrowing, and locks in the moisture for the plant.

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The Kramer Co., Paxton, Illinois

Practical Poultry Culture

THE POULTRY HOUSE.

By Henry Langenschwadt, San Jose.

The hen spends sometimes nearly half her lifetime in the house you provide for her; probably more, rather than less that time. This fact alone should impress us with the importance of properly housing her, if it is desired that she give us best results.

If you are to accomplish a great amount of work well, it will be done best under comfortable conditions. See that the hen is kept comfortable, and you have one of the essentials for enabling her to earn for you. Keep this fact before you in building the house.

We must adapt our methods in keeping poultry to the particular locality where we are living. The climatic conditions, seasons, soil, altitude, foods available, etc., differ, so that what can be put into successful practice in one section would often be altogether out of the question in another. To a great extent this fact is true of housing poultry. One must take into consideration many points, some of which naturally are peculiar to the locality. A great variety of poultry houses are to be found in the different parts of the country. Seldom will you come across a house that is the exact duplicate of one previously seen. The builders generally worked out the plan to suit themselves, and often endeavored to adapt the house to conditions prevailing.

Before we choose the site for the house, might it not be well to say a few words about the character of soil where the chickens are to run? When large numbers of chickens are kept, particular attention should be given this point. Where a small flock is kept, it would not be noticed so much. It is not absolutely necessary that chickens have a certain kind of soil to do well. At the same time, don't think, as some do, that any old soil is good enough. Experience will teach you what the difference is. There are some much to be preferred to others. For ourselves we would choose a light, porous soil, and avoid the heavy clay and adobe. The latter are bad in wet weather. If not worked properly at just the right time, they make very poor ground for chickens to be on in dry season. Certainly, where one has no choice, make the best of what you have.

Choose a site for the house on ground high enough so as not to have standing water around it when it rains. Let it be conveniently situated, easy to get at.

Chickens should have plenty of green food. If they have their range where it is growing, it will save time feeding. Besides, they can help themselves as they desire it. Sunshine around a poultry house is very desirable and necessary to promote the health of the fowls. If there are high winds, have the house sheltered from them if possible.

As to styles of houses, there are many in use, their merit varying. Some you would not want to use for a pattern. What is the best kind of a house? Would it not be well to go over some of the points we want to consider? Then we shall be better able to work out and decide upon the plan.

We want the hens to do their best for us. They must be kept comfortable. More attention sh[illegible] be paid to this point than generally is. While we do not have the extreme cold weather here on the Pacific Coast, the nights are much cooler, making the range in temperature between day and night as great or greater than where cold winters are experienced. To give plenty of fresh air, and yet not expose the hens to cold nights and mornings, is what we ought to try and do. The question of ventilation that is just right is a hard one to solve. By all means avoid drafts. If you don't, you will open the way for sickness such as colds and roup. It is not so many years ago when it was the belief, and to some extent is yet, that a tight house was best to keep the hens warm. It was thought they would lay better then. Little ventilation was provided. If air was changed too much, it would be difficult to keep the house warm. We have seen houses in which 50 to 75 hens roosted, with an opening of less than a square foot to admit fresh air. Is there any wonder that cold and roup developed among these hens? Why would there not be, when the hens came from the heated and damp air inside the house out into the cool air early in the morning? You would have a cold under the same conditions. Why not the hen? A constant supply of fresh air in the house is as essential as food to your hens to keep them healthy and vigorous, as they must be, to be good producers. No drafts, plenty of fresh air, and yet do not expose the fowls too much to the cold nights; protect them from heat when days are hot, and from the rain, and admit sunshine liberally—all are points that hinge together to be considered in house construction.

Shall it be just a house for roosting, or one which will provide shelter and a place for exercise in rainy weather? It seems to the writer that a house with scratching shed can be used as well here in California as where there is freezing weather and snow. While we do have milder weather the year round, permitting chickens to be out in it, yet there is more or less rain in winter months, sometimes for days at a spell. It comes at a time when the hens should not be without exercise, because the eggs are desired for hatching. In fact, to give the average flock exercise, a feed of grain each day, scattered in a deep litter of straw, would certainly benefit the hens and help keep them in good vigor. A scratching shed would come in well. It could be used not only in stormy weather, but in the dry season, when ground is bare. Grain fed in litter will give hens needed exercise.

A certain man had a fine lot of hens. They had good care and plenty of food. They did not pay—and why? The grain fed was practically poured in a heap on the ground. In a few minutes the hens had their fill. They lay around all day, and got fat. If they had had to work for that grain a couple of hours, they surely would have been in better shape to lay eggs. Another man made money on his hens. When the price of eggs was high, he got his hens to lay. Most others were getting few or no eggs at all. He had scratching sheds built beside his roosting houses. The hens were never without their needed exercise, scratching for their grain in litter, and at the same time were protected from wind and rain. There are many items which

60,000 "Queens" in the Contest

all along the line last year, and the Queen never fell behind. Friends, you will be interested in knowing about the uniform big hatches produced by the

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It is the dependable hatcher under *all* conditions, in *everybody's* hands.

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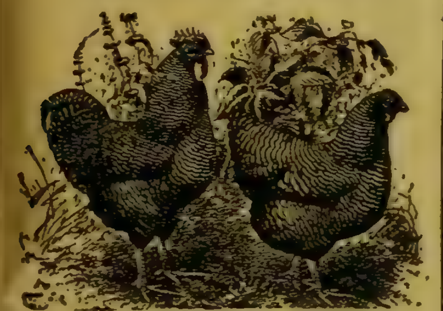

To the Poultry Raisers:

Do you want sick, mopey chickens, or do you want strong, healthy ones? Above are the kind of healthy chickens found on a ranch where Merval is used. Why not give your chickens Merval and have strong, healthy birds like these?

Merval will cure Roup in a week, and other diseases such as Canker, Chicken Pox and Diarrhoea in ten days.

Merval is also a fine tonic for run down hens. It puts them into condition again, which means more eggs.

Get a can from your dealer today. If he does not sell Merval, send us one dollar and we will forward you a one-pound can, postage paid.

Do it now. Remember, Merval won't cure dead birds.

Agents—C. H. Werdig, Sebastopol; Geo. P. McNear, Petaluma; Riverside Poultry Co., Riverside; J. A. Reinhart, Hollister; H. W. Thielsen, Oregon; A. W. Huskins, 713 Waterloo St., Los Angeles.

Merval Manufacturing Syndicate
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Buff Orpingtons Exclusively

Cal. State Fair, 1910; won every prize but 3" ckl., gold sweepstakes special, for best competitive display in show all varieties competing.

Booking orders NOW for eggs, "day old" chicks and young stock, the best ever produced, now ready for shipment.

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"Chicks well hatched are half raised"
CHICKS
White and Brown Leghorns
Orders booked for future delivery
San Jose Hatchery
Henry Langenschwadt SAN JOSE, CAL.

when given proper attention will change a loss into a profit.

The scratching shed can be made adjoining the roosting quarters, or both can be put under one roof. Dropping boards can be placed about two feet above the ground, and the roosts above these. That will leave the entire floor clear, so that it can be used for scratching litter.

Earth makes the cheapest and best floor in a poultry house. It can readily be removed to the depth of a few inches from time to time. There may be instances and styles of houses where you could not use it, and some other material would be advisable.

Make the house high enough so that you can easily do the necessary work in it, of size according to the number you wish to keep in it. Some do not put over forty to fifty hens in a house. Others will put seventy-five to a hundred. When a greater number than this is placed in a house, it is said the egg yield is not so good, though we have seen 500 in one house, where a more than average egg yield was obtained. It cannot be said that this was to be directly attributed to the house, or whether there were other reasons for it.

One must get familiar with local conditions of weather, and use judgment in the matter of ventilation. We would hardly advise using the so-called ventilator. Be sure to avoid drafts. Probably no better method of ventilation is to be had than to have either the whole or part of the front of the house left open, and all other sides closed tight. Such an opening would at the same time admit sunlight. A burlap curtain could be provided, to let down all or part of the way when nights get cold. When cold enough to keep this curtain down, there will be a constant change of air in and out through the burlap. Where winters are severe, a curtain before the roosts is often used. The opening could be covered with poultry netting to keep out unwelcome visitors. Face the house so that prevailing winds will not come into the front, and yet so that all the sunshine possible can enter.

It does not get cold enough along the coast in winter to injure fowls kept in an open front house. Yet, if you wish to secure your eggs during the fall and winter months at the least cost, it might be advisable to use a curtain to close part, or may be the whole, of the open front. This would add to the comfort of fowls in severe cold spells, giving you more eggs with less food consumed. The food that the hen eats goes in part toward supplying bodily heat. If consumed to keep her warm, there will be less for eggs. It is from food beyond that required for bodily maintenance that eggs are secured.

Yet, as long as drafts are provided, we believe it would be better to have too much ventilation than too little. If ventilation is poor, your house is liable to be close and damp during the night.

While having an open front house, we want to keep in mind to protect hens from wild animals—skunks, etc. Then the inside fixtures, such as roosts, nests and dropping boards, should be made so that they can be removed and easily cleaned. You will especially appreciate this should you ever have occasion to fight mites or other vermin.

Don't buy screenings for feed. Buy good wheat or corn.

SIMPLE CURES FOR ROUP.

1. When first the cold is noticed, put a bit of bluestone in the drinking water, a piece as big as a navy bean in a quart of water, not any stronger. This is a germ killer, dries up the cold in the head, is a disinfecant and will prevent the other chickens from catching the disease. So if any chick takes cold, put this into the water of the whole flock to prevent the disease spreading.

2. For a common cold, a pill of quinine and one of assofoetida, one grain in each, with half a teaspoonful of cayenne pepper, will frequently cure a cold in one night.

3. Take of lard two tablespoonfuls, vinegar, mustard, cayenne pepper, each one tablespoonful; mix thoroughly, add flour enough to make stiff dough. Give a bolus of this the size of the first joint of the little finger. One dose frequently cures; if not, repeat in twelve or twenty-four hours.

4. For diphtheritic roup peroxide of hydrogen is without doubt the best remedy. Dilute with from one to three parts of water. The solution when applied to the diseased surfaces should be repeated until there is no bubbling. When a little of the solution is forced into the nostrils by the use of a dropping tube or an atomizer, it will be driven high up by the force of the foaming, reaching parts otherwise out of reach.

5. Equal parts of powdered alum, magnesia and sulphur blown into the throat and nostrils through a quill.

6. For canker, four grains of sulpho carbolate of zinc to one ounce of distilled water. Paint the canker spots with this night and morning, and in two or three days the germs will be killed. The chickens should have nourishing food, such as bread and milk and chopped onions. If there is any doubt as to whether the disease is canker or roup, you had better use the peroxide of hydrogen one day and the zinc the day following, alternating the treatment. It will not do to mix the two medicines at the same time, as one will neutralize the other.—Coleman's Rural.

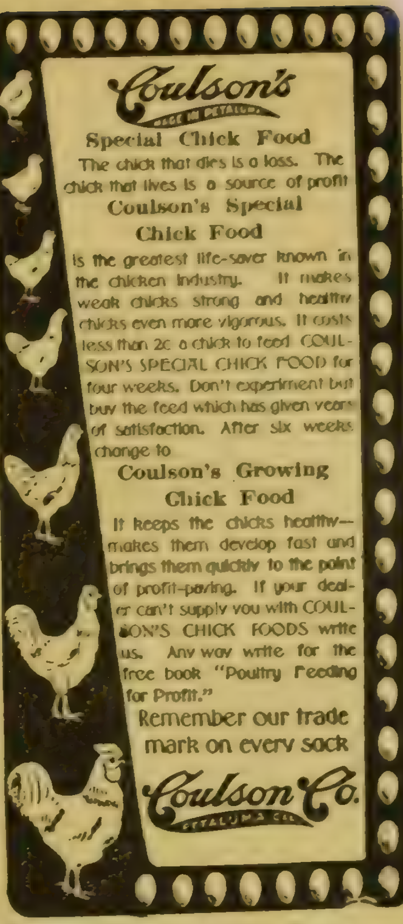
CRUELTIES IN THE POULTRY YARD.

It is surprising how many people, otherwise model citizens, are guilty of cruelty to both fowls and animals. It may not altogether be intentional on their part, but nevertheless they do things that call for censure.

One of the most common acts is to carry chickens by their legs, heads down. This cruelty has been practiced for years, and no one ever thought anything about it. They did not notice the rush of blood to the head of the fowl when carried that way. A neighbor just the other day was carrying a fat hen by the legs, and in a few minutes the bird was gasping and came pretty close to choking to death. An equally cruel method is to carry fowls by the wings—especially so when the fowls are heavy bodied. The proper way it to allow the fowl to rest on the arm, the legs held firmly by the hand; or it can be held between the arm and body.

A dealer was one day noticed to yank killing stock out of a crate, by catching by a leg or wing, and otherwise roughly handling them. When remonstrated with he replied that it did not matter, as the birds would soon be killed.

With some people it is common to throw fowls over the fence into a yard. There is no telling in what manner



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Special Chick Food
The chick that dies is a loss. The chick that lives is a source of profit
Coulson's Special Chick Food
is the greatest life-saver known in the chicken industry. It makes weak chicks strong and healthy chicks even more vigorous. It costs less than 2c a chick to feed COULSON'S SPECIAL CHICK FOOD for four weeks. Don't experiment but buy the feed which has given years of satisfaction. After six weeks change to
Coulson's Growing Chick Food
It keeps the chicks healthy—makes them develop fast and brings them quickly to the point of profit-paying. If your dealer can't supply you with COULSON'S CHICK FOODS write us. Any way write for the free book "Poultry Feeding for Profit."
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Here's his new Incubator door all are talking about. Perfect ventilation for the *first* time.

Mandy Lee Incubators

supply life-giving oxygen freely to the eggs and just as naturally draw off the poisonous gases. The most important step ever taken in incubator ventilation—neither above nor below, but *right at the eggs*—the correct principle, for the new Mandy Lee is making better hatches of *stronger* chicks than any other incubator in the world.

We Measure Everything

Heat—moisture—ventilation. You *guess* at nothing. If the eggs are good and you follow simple directions your work with a Mandy Lee is as nearly an absolute certainty as anything can be. There is no more reason why you should buy an incubator that regulates nothing but heat than for a farmer to continue to harvest his crops by methods and machinery used 100 years ago. Your success with poultry depends on your ability to select equipment that is *right*—that's what you *always* get from us.

No guessing with a Mandy Lee

Send *to-day* for new catalog. Learn of these new improvements and of our new *out-door*, *lamp-heated* and *regulated brooder*, just what is needed.

GEO. H. LEE CO.,
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The Arenberg Brooder Stove
Proven to be the most successful Brooder Stove on the market. Awarded gold medal for most Meritorious California invention at California State Fair, Sacramento, September, 1910 Burns distillate, perfectly simple and easy to manage. Write for details. H. F. ARENBERG, Petaluma, Cal

The Rural Californian, the leading monthly $1.00 the year.
The California Cultivator, the leading weekly, $1.00 the year.
Both one year for $1.50.

they will reach the ground, and when this cruelty is performed while the attendant is in a fit of anger, there is considerable force put into the throw.

A very pious old gentleman was vexed to the cussing point because his chickens happened to get out of the yard, through a broken fence, into his garden. In his anger he threw a stone and lamed one of the fowls. "There, it serves you right; I don't pity you a bit," was the only comment on the accident. How much better it would have been to have carefully driven those fowls back into the yard and at once repaired the fence.

Verily, the contrariness of the hen is "not in it" with the contrariness and stupidity of some of the attendants.

A common cruelty is to overcrowd the flocks, especially in close, badly ventilated houses. Allowing the supply of drinking water to run out, and placing the drinking vessel out in the sun, are also cruelties practiced by shiftless, lazy people.

Many acts of cruelty can be named in the methods employed in breaking up broodiness in hens. For instance, dousing them in water, tying them by one leg to a stake, or throwing them into a yard of young cockerels to be knocked about right and left, are all practices that should be stopped. Broodiness is a provision of nature to rest, and certainly the industrious hen deserves it. But if it is wanted to have her change her ideas or condition, the only humane way is to place all such in a separate house where there are no nests nor male birds, and allow them to gradually have the fever pass off.

For some years back it was the custom to sell little (newly hatched) chicks at the poultry shows, and also at large bird stores around Easter. These innocents were bought by fond parents for their little tots, and carried to their homes in pasteboard boxes. Without the proper brooder heat, or the right kind of food, these little chicks would be slowly tormented to death, quite often, too, by rough handling from the "cute baby." But it is now so now. The Society for the Prevention of Cruelty to Animals has taken hold of the matter and will no longer allow this uncivilized cruelty.

Anything that will inflict needless pain, or make the fowls uncomfortable, should be punishable. It is surprising how many people, who otherwise are kind-hearted and good, will not stop to think that their very acts are uncharitable and unchristianlike.—American Cultivator.

HOW PULLETS TAKE COLD.

Do not allow the pullets to roost in the coops where they were raised. The cooler the weather gets the worse they will crowd. They will suffer from the heat, and when let out these cool morning are apt to take cold, and roup is the next thing on the programme. The pullets expected to lay this month should be roosting in a comfortable house at this time. —Farm Journal.

POULRY DROPPINGS.

Store poultry droppings in barrels in a dry place. Mix with an equal quantity of leaf mold and you have a valuable fertilizer. It is very rich, a little will go a long way, and if carefully applied can be made to pay for all the feed the poultry consumes.

Poultry roosting in trees is not exempt from insect enemies. This has been proved by the experience of many who make a business of raising poultry. An examination of the limbs of trees where the young flocks roosts at night, before the birds have been yarded and housed for the winter, will show countless numbers of mites resting under the loose bark. Chickens generally seek the same roosting place night after night, and carry insects with them. The tree becomes infested and the vermin increase in numbers with wonderful rapidity; finally sapping the vitality of the birds. Then farmers wonder why food does not fatten. When birds are old enough to "climb trees" they should be placed in coops that can be easily disinfected and kept in a healthy condition, if the best financial results are expected. Such is the advice of the poultrymen at the Minnesota University Farm.

GREEN BONE FOR EGG FOOD.

There is no disputing the fact, green bone is an excellent egg food and one of the best substitutes for worms for fowls kept in confinement. It is likewise excellent for growing stock. One producer has fed green cut bone twice a week, and allows about a pound to every sixteen head of grown stock, and half the quantity to that number of growing chicks. To feed green bone oftener than that or in larger amounts is apt to produce bowel troubles and worms, and also grow the combs too large. Too liberal feeding of fresh meat it apt to make fowls irritable and cross.

In treating sick fowls, put them in a temporary hospital or coop isolated from the poultry houses. Fowls usually get sick because of wrong conditions; naturally it is difficult to effect a cure without removing them from these conditions. A bird with a roupy cold, caught from a draft through a knothole, is not apt to recover until it is taken away from the draft, or the knothole is stopped up. See that the chickens have dry, well-ventilated quarters. Feed and water them well, and there will be little sickness among them.

I wish to give the record of an even dozen of "common" hens that were fed three quarts of milk, whole barley and wheat with green alfalfa to complete day's ration during the past three months. I have kept an accurate record during the months of September and October. During the first month they laid 203 eggs and during October 135 eggs.—E. L. DeWitt, Vacaville.

Start the trap nests so it can be known which are the best winter layers. Almost any old hen will lay in spring and summer; it takes a good hen to lay in late fall and winter.

POULTRY SHOW DATES.

Petaluma, Cal., Dec. 8-11, 1910. Fourth Annual Poultry Show of the Petaluma Poultry Association. H. R. Campbell, Secretary, Petaluma.

Santa Barbara, Cal., Dec. 18-19, 1910. The annual show of the Santa Barbara Poultry and Pet Stock Association. W. E. Lingard, Secretary, R. F. D. No. 2, Santa Barbara, Cal.

Ashcroft, B. C., Dec. 23-31, 1910. W. Maxwell, Secretary; H. H. Collier, Judge.

Tacoma, Wash, January 3-11, 1911. Frank L. White, Secretary, South Tacoma; Miller Purvis, Judge.

San Diego, Jan. 4-5-6-7, 1911. San Diego Pigeon and Pet Stock Club. A P. A. rules. W. C. McDougal, Secre-

Los Angeles, Cal., Jan. 5-11, 1911. Annual of The Poultry Breeders Association of Southern California at Chutes Park. A. H. Memler, Secretary, San Gabriel.

Colfax, Wash., Jan. 10-14, 1911. H. Rosenkranz, Secretary. H. H. Collier, Judge.

Walla Walla, Wash., Jan. 17-21, 1911 H. Dickinson, Secretary; H. H. Collier, Judge.

Jerome, Idaho, January 24-28, 1911. Wm. N. Hardwick, Secretary.

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Big demand for poultry products at top notch prices—makes the chicken business *better than ever.* Go into it *right.* Pacific Coast poultrymen testify that

Cyphers Incubators and Brooders

the World's Standard Hatchers, give the *best results* in meeting Coast conditions and requirements. The Cyphers is a genuine non moisture incubator; self-regulating, self-ventilating. It is used by more Government Experiment Stations, by more poultry fanciers and on more big and successful poultry plants than *all other makes of incubators combined.*

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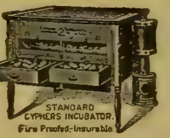
You can rely upon the results from the Cyphers—*hatch after hatch.* Mr. C. Flewelling of Petaluma, Cal. uses 14 Cyphers and averages 75% of the total number of eggs set. Bertha M. Story of Oregon City, Ore. says "I rarely have less than a 90% hatch of good strong chicks." Cyphers Incubators and Brooders are fireproof and insurable. We guarantee Cyphers Incubators and Brooders absolutely and are right here on the coast to back our guarantee. Write today for our big handsome book: "Practical Poultry Raising" and 1911 catalog of Cyphers Incubators, Brooders and Poultry Supplies.

Cyphers Incubator Company, Dept. 46, Los Angeles, Cal. Also Buffalo, N.Y.



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FIRELESS BROODERS THE KIND THAT RAISE THE CHICKS

THE PHILO SYSTEM

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Gentlemen: A year ago we started with the Philo System, and raised as fine a lot of White Orpington pullets as anyone would wish to see. The two machines we purchased of you last season have given excellent satisfaction. We shall probably need more this year, and shall use the CYCLE machines in preference to a large incubator. Yours truly, S. N. HAINES.

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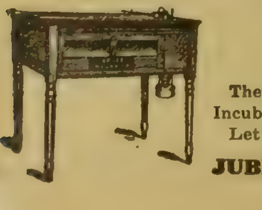
Let us send you our Catalog. It's free.

JUBILEE INCUBATOR CO., Sunnyvale, SantaClara Co., Cal



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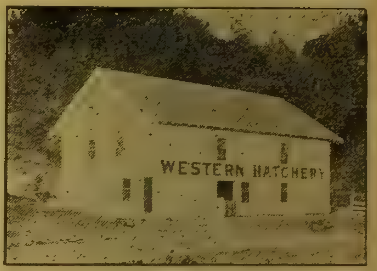

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The world's greatest egg producers. First, California State Fair, 1909. First, display pen; first, breeding pen; first, drake; first, duck and second, duck, at the Los Angeles show, 1910. Eggs for hatching.

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Eggs for sale in season.
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Eggs for hatching from the well-known Hawkins Strain of B. P. R. best matings, $2.50 per 15. Utility stock $1.50 per 15.

ENOCH CREWS
Fairmount Ave.

Irrigation and Forestry

THE WEEKS BILL.

The Weeks bill is national in its scope. While its proponents have the Southern Appalachians and White Mountains in mind as the regions most vital at present, in which its principles directly apply, it will be noticed that they may be applied to any sections in which the necessity may exist or arise. It is reasonable to suppose that in the application of its principles the Southern and Eastern sections of the country would be given first consideration because of the greater necessity in these sections for immediate preventive and protective remedies.

The objects sought in this bill appeal to every American on grounds of broadest and most unselfish patriotism. It is the first step in the direction, and fundamental to, the great movement for the conservation of our natural resources which is the vital point round which the constructive thought and statesmanship of the present are building for the future. It is the most practical and immediately necessary of the conservation measures that have been proposed and was strongly pointed out to be such by President Roosevelt in enunciating the conservation policy. It involves the smallest initial expenditure, the least possible future expenditure, and the surest return upon the investment, judging from the experience of every country that has practiced for a sufficient term of years a comprehensive and efficient policy, of any project embodied in the conservation movement It seeks to conserve the richest of our national assets from serious impairment if not destruction—our navigable waterways.

The bill involves an issue of national equity and appeals strongly to the nation's sense of equity without regard to section or party affiliation. Years ago the original states of the East obtained by purchase and cession a great national domain west of the Mississippi. Out of this domain many of the states of the West were carved and endowed with all the rights of the original thirteen. To their development the older states contributed by liberal legislation, investments, and by the initiation of great national improvement enterprises for which the whole country, not the new states alone, contributed the funds. Finally, for the good of the whole, for protection and welfare of the future of this Western country, the nation took out of the market millions of acres of its lands, gave up its expectation of returns to the amount of over $400,000,000, in which all would have shared, in order that beneficent forests might be maintained in perpetuity in the Western mountains, that a supply of timber might be assured for all time to the people of these states, and that the necessary flow of their streams might be maintained.

In the meanwhile, the crowding of civilization, the insistent demands of the market, the wasteful manner of handling and the ravages of fire had been devastating the Southern and Eastern mountains, which had passed into private ownership long before it was realized that there could ever come a time when the necessity of conserving the natural resources of this rich country would become an issue of supreme importance alike to the present and the future. Not only was the timber supply threatened with exhaustion, but the flow of numerous rivers, whose waterpowers furnish so much wealth and employment, was in jeopardy, and, through erosion, silting and irregular flow, the navigability of many of them was endangered. The plea of the people of the Northeast and Southeast for relief was brought to Congress more than a decade ago, and is now before Congress in this bill.

Along with the national irrigation work of the West, the hundred and ninety-odd million of acres of national forest in that same section, the gift to the world of the Panama Canal, these people of the South and East appeal for the expenditure—more properly investment—of a few million dollars conservatively applied to initiate in their mountains a conservation enterprise which is in line with the past policy of the Nation in other directions, and of every first-class power in the world. It is a movement which the states themselves are unable to initiate. They have neither the power nor the resources, nor is it a duty which they alone can be asked to assume. Every state of every section will benefit by the conserving of the timber supply, water powers and navigable streams of our Southern and Eastern mountains. It is a national duty which neither in equity nor wisdom this Congress can longer shirk.

Every year of delay increases the loss of our resources in these regions. Each year of postponement of action adds to the loss and the ultimate expenditure which shall have to be made when necessity forces us ultimately to acquire and control these forests. It is a short-sighted policy which blinds us to the lessons of history and the experience of other and older countries.—From Report of Commissioner of Agriculture.

SURFACE WATERS OF CALIFORNIA.

During the last five years investigations of the quality of the water of streams in California have been made by the United States Geological Survey in co-operation with the State Department of Engineering, and a report of the work done has just been published by the Survey as Water Power Paper No. 237, by Walton Van Winkle and Frederick M. Eaton.

Thirteen Hundred Analyses.

Samples of water were collected daily for one year at 37 points on streams in the State and were analyzed to determine their mineral content. Single samples were taken at 14 other places and these also were analyzed. The University of California courteously afforded laboratory space for the analytical work. The report presents the results of more than 1,300 analyses of water, gives descriptions of the streams and drainage basins, and shows the sources of water supplies now provided and the methods of sewage disposal.

All Kinds of Water in California.

Practically every kind of water is found in California, so that the mineral content of samples taken from different sources differs widely, ranging from 100 parts per million in the soft waters of the Sierra to 200,000 parts per million in the waters of Owens Lake. The minerals are, of course, derived from the rocks and soil traversed by the streams. The rivers of the northeastern part of the state receive but little mineral matter from the almost insoluble granitic rocks over which they flow. Those of the coast, which drain areas composed in large part of loose sedimentary deposits, leach out much greater quantities of minerals.

Importance of Long-Continued Work.

The report shows the importance of making a series of analyses of samples collected during a long period and proves that analyses of single samples taken from any

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5000 Eureka Lemon trees
5000 Valencia Late Orange trees
5000 Navel Orange trees
3000 Grafted Walnut trees
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People who intend to plant lemon or grafted walnut trees this season will have to secure them from some source early as they are now very scarce.

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The Ames Continuous Flow Deep Well Pumps

Deliver a continuous stream from lower end of cylinder in well to point of discharge.
They run continuously day and night without care or attention except to oil.

All of the valves or working parts of both our single and double acting pumps can be removed, repaired and replaced without pulling up the cylinder or heavy column pipe or moving the power head off its foundation.

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stream may give entirely erroneous ideas as to the average quality of its water. Samples taken at the same place at different times show great differences in character.

Influence of Rainfall.

Rainfall is an important factor in determining the mineral content of stream water. The average mineral content of the surface waters in regions commonly called semiarid is about four times that of the surface waters of humid regions. The analyses show that the waters of the semiarid parts of the state contain proportionately less calcium, more alkali, less carbonates and much more sulphates than those of the humid region. None of the water examined from streams of the semiarid parts of the state is of good quality for industrial use, and railroads in those regions have great difficulty in procuring water suitable for locomotive boilers. The best waters for use in boilers are those of the orange belt of Southern California.

Some Uses of the Analyses.

By means of the analyses given in this paper the chemist can determine the proper treatment of waters needed for industrial uses or can select proper sites for factories that require water of a special character.

DRY FARMING BULLETIN.

The United States Department of Agriculture has for several years been carrying on investigations and accumulating data regarding dry land agriculture in the Great Plains, and in compliance with the urgent demand made by settlers, actual and prospective, for information concerning the best methods of farming in that section, it has issued two bulletins giving publicity to such facts and figures as have direct bearing on the subject, although it is not claimed that sufficient data have been accumulated to form a basis for final conclusions.

The results announced are, however, of sufficient importance to deserve careful consideration, and they throw strong light upon the controverted questions of summer tillage, continuous cropping, and crop rotation, and show that in addition to actual rainfall the questions of evaporation and run-off have much to do with the successful production of crops in those sections. Accurate information regarding the precipitation in many sections of the West is now available as the result of the extended operations of the United States Weather Bureau; many of the records are complete for years, and being of value to the prospective settler, have been computed in rainfall tables and have been included in the bulletins.

The bulletins treat to a greater or less degree upon continuous cropping as compared with alternate cropping and summer tillage, upon crop rotation compared with continuous cropping, and the relative farm value of crops of wheat, oats and barley as produced by the various rotations and by continuous cropping. The question as to the relative merit of disking the corn stubble for spring wheat and oats and summer tillage, and the relative merits of fall and spring plowing receive considerable attention and are discussed in one or the other of the bulletins in connection with the distribution of rainfall, rapidity of evaporation, and the amount of moisture conserved by the different processes.

Prospective settlers are apt to give very little attention to the climatic features other than the total rainfall. Oft times they do not even assure themselves that the figures given for a particular region represent the normal rainfall and not simply the rainfall of a single year. They ignore almost completely the frequency of torrential rains, the seasonal distribution of the rain, the loss of water through water run-off, the occurrence of hail, and the amount of evaporation. These bulletins are intended to bring the importance of such factors to the attention of the prospective settlers in regions of limited rainfall. The bulletins also contain tables showing the normal rainfall for practically every station in these regions where precipitation records are available, the tables being supplemented by state maps showing at a glance the distribution of the rainfall in the state.

SUB-IRRIGATION.

We don't know whether Florida is simply undergoing the sub-irrigation spasm which California experienced twenty-five years ago or whether it has something new which will prove of value. We are reasonably sure it is the former. It has been talking sub-irrigation for some time. In a recent Florida, Fruit and Produce News we note the following from an enthusiastic believer:

"Let me describe the system, its operation and theory, and tell what it has done for us of Sanford. Its possibilities seem limitless. Without an illustration or drawing, a description is difficult to understand or remember. Briefly, the water is applied through three-inch tile, laid in parallel ditches eighteen inches deep, with a fall of not less than one inch to one hundred feet. The distance between the rows of tile varies according to quality of soil; in sandy loam, twenty-five feet affords effective drainage, as well as irrigation. The more clay, and the stiffer the soil, the nearer they should be placed. At the upper end of the tile, beginning at the water supply (with us, flowing or artesian wells), and running by the end of each row of tile, is the water main, the cheapest being small sewer pipe cemented at the joints. Between the tile and this water main a joint of six-inch sewer pipe is used as a standpipe, connected by a short iron pipe on one side with the main, while on the other is the connection with the tile. It will readily be seen that water turned into the water main, and running by each of the standpipes, can be turned into as few or as many as desired, in this way irrigating all or any portion of the field. Of course, the tile is in short joints, with us one foot in length, and the water finds ingress or egress at the joints, porous tile being more or less a myth. At the lower side of the field the tile discharges into a waste ditch, and when the ground is level and the flow of water not too rapid, it will be found that capillary attraction supplies all the moisture needed, even for setting plants, but most fields are equipped with stop-boxes at the lower end of the tile, and when the ground is much broken these boxes are placed at intervals, as required, even to flooding the ground.

"This much for irrigation. It is quite as effective for drainage, being laid on an incline, and water applied by gravity. In case of rain the excess is taken off very rapidly, and on our soil if it rains three inches today we can plow tomorrow. This we find is of inestimable value, for the soil saturated with water cannot be worked; as the small boy would say, 'there is nothing doing,' or, as a Western farmer put it, 'you can't get no action out of the ground.' The reason of this inertia, as all know, is that the water excludes the air from the ground. Now, with surface irrigation, and without this sub-drainage, you have to wait for the water to evaporate, which slowly drying on the surface, inch by inch, lets in a little air from above, while the plants await the life-giving air. With our system, as soon as the water stops running the tile becomes a conveyor of air, which is supplied from both top and bottom. Our system not only does these things, but furnishes warmth from below, and as warm air rises from the tile it has a marked influence on the growing crops, especially in winter, when our most profitable crops are grown, for with us September or October is seed time, and February and March the harvest. You can understand that it matters little to us whether it rains or not, for during the winter of 1906 it rained frequently and in torrents, while the next year we had not a single rain from September 15 to April 5, yet raised equally as good and profitable crops. So rain is not necessary to plant, grow and perfect a crop."

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Queries and Replies

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Grapevines.

Should grape vines be sulphured for the red spider when in blossom or just after the blossom falls and the grapes are setting? Also how can the vine hopper, a tiny fly-like insect, be destroyed? Have noticed that some vineyardists turn sheep into the vineyard in the fall to browse on the leaves and vines. Are they a benefit in any way or an injury?—Subscriber, Delano.

Vines are not sulphured for red spider except when it appears. Liver of sulphur is used on vines as a spray for red spider. This is a cooked spray and few care to bother with it. The simpler way is to cultivate better and to winter irrigate the vineyard well enough to overcome the dryness of the soil and in that way control this pest. The sulphuring when in blossom is for mildew and the red spider appears later in the season. The vine hopper question was discussed and illustrated in the last issue. "Sheeping" vineyards was a way that we used to control the hoppers as the complete cleaning off of leaves and the tramping into the ground lessened the hoppers the next season. The vines are not injured in any way as far as I can see, and the sheep leave in their droppings considerable fertilizer. On the other hand they tramp the land hard and if the rainfall is light it makes it much harder to get the land into good condition of tilth.—M. E. S.

Substitute for Milk.

What is the best substitute for milk for a week-old calf?—J. W., Monrovia.

Hay tea, made by infusing alfalfa hay in a closed can. The tea should be dark in color. Cook a little flax seed to a gruel and add a tablespoonful to each quart. Feed the calf four times in twenty-four hours the first two weeks, and then three times a day until it begins to eat grass. If more convenient, oatmeal may be used instead of the ground flax seed. We have used bran tea with good success, but the bran nowadays has little substance. The only thing to observe is to make the food fresh and feed it warm, and not overfeed it. Alfalfa meal may be more convenient to make the tea from, and seems to give good results when we have used it for young pigs.—M. E. S.

Grafting Peaches.

My peach trees are eight years old, all seedlings. Can they be grafted, and what is the best time?—Subscriber, Sanger.

These peaches can be grafted to peaches, plums or apricots, successfully. The best time for work is when the trees are perfectly dormant, say in February or March. Soon before blossoming time is better.

Roup.

What is the trouble with our laying hens? They eat well but their eyes are affected; one of them has become blind; others have thin skin over eyes and cannot see. One of our neighbors has poultry affected in same way. We are feeding sugar beets. Will this do them good or not?—Subscriber, Lodi.

This is too limited a description of the trouble to enable us to be sure of the cause but would judge it to be roup. Would refer our subscriber to page 62 of our issue of July 21st. In a word, thorough cleaning of premises, moving well birds to clean, new corral if possible, and using care to disinfect roosts and houses will greatly help. Feeding sugar beets at this season of the year when there is no green feed is all right for adding succulence to the ration, but they have little nutritive value.

Bourbon Red Turkeys.

Where can I secure eggs of the Bourbon Red turkey?—Mrs. M. Goss, Madera, R. R. 1.

We are unable to learn regarding that turkey in this state and subscribers having information will confer a favor by writing to Mrs. Goss.

Poor Butter.

Since our cow freshened, the butter has not been marketable. In churning, the butter comes in four minutes, but does not separate well, and is not firm, though we churn at 58 to 60 degrees. By leaving butter stand over night and get cold we manage to mold it, but it softens at once as soon as the weather gets warm. We keep the milk cold for twenty-four hours before skimming. In milking, there is more foam than usual. Feed alfalfa and pumpkins.—Subscriber, Hemet.

In cases like this I would think the trouble was purely in overripe cream. The feed of the cows has not a great deal to do with the butter, except where some very concentrated foods, like cotton seed meal, are used.

In correcting this difficulty, first of all consider the cause as overripe cream. The globules of butter fat are already breaking down. Fifteen to twenty minutes is as quick as good keeping butter should come in the churn. When the fat globule is once broken, it can never be restored, and the butter has lost its texture. In the butter made from cream properly ripened the fat globules stand separate, with the watery portions of the milk between them. Churning is merely the forcing out of the casein and watery milk, and bringing these globules into close relation to one another, when a solid mass of butter is secured. The small spaces still left are then filled by the water carrying the salt in solution. Churning oftener will help, and ripening at a lower temperature will help. When not possible to churn oftener, salting the cream is often resorted to. Put a heaping tablespoonful of fine dairy salt into each gallon of cream. Stir it in well, and whenever adding fresh cream, add salt in the same proportions. Have the cream added at the same temperature as that already on hand, and stir it well. The butter will probably not require any more salt added to it than this, but that is a matter of taste. A few trials will show you how much to use.

When the butter comes and is the size of grains of wheat, not larger, run off the buttermilk and cover the butter in the churn with as cold water as possible to obtain. Then scald and cool off the butter bowl and paddles. Rock the churn five or six times, and slowly turn it over by hand a couple of times. Then run off the water, let the butter drain, and put on the worker and work at once. It may be made into rolls now, or it may be stood away for several hours and then made

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Unsolicited Testimonial Just Received from Large Ranch in Kern County:

"The Eucalyptus trees arrived in excellent condition; and were the thriftiest, stockiest, and altogether the finest trees ever received on this ranch"

We have large stock 18 months' old trees for early planting, and also 9 months' old for later planting: to see the stock will convince anyone of its quality and hardiness; prices right.

Unsolicited testimonials just received from well known experienced horticulturist: "The fruit trees you sent last year did well and are the admiration of the neighborhood." (Names given if desired)

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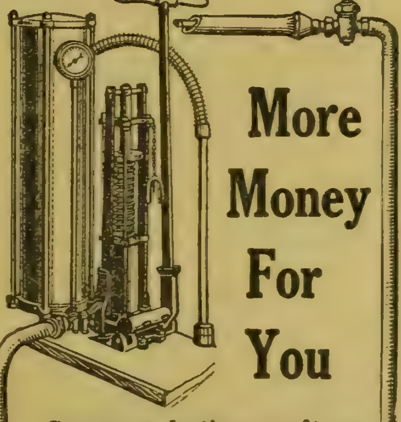

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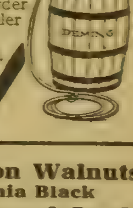

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California Cultivator Clubbing Price List

FOR THE SEASON 1910-'11

Prices are Good to Oct. 1, 1911

This magazine price list is prepared annually for the convenience and benefit of Cultivator subscribers. The prices given allow our readers the benefit of the lowest figures possible, in return for which, all we require is that to all orders a year's subscription to the Cultivator (class 18) be added at 90c (regular price $1.00 per year).

This year the pricing of various combinations of magazines is a simple matter; all are listed according to class number and this class number multiplied by 5 gives the cost price.

EXAMPLE:

Class No.		Regular Price
20	American Magazine	$1.50
16	Delineator	1.00
37	World's Work	3.00
18	Cultivator	1.00

91X5=$4.55. Club price for all. Amount saved on this club, $1.95.

We desire to especially call attention to this complete list of the most popular magazines. We can, however, supply any periodical published, at the lowest price, and any not listed here will be quoted on request. Let us make you a price on any combination you may desire.

Periodicals in any combination may be ordered to the same or different addresses. Foreign or Canadian subscriptions are extra on account of added postage and prices must be gotten by correspondence. Subscriptions may be either "new" or "renewals," but it is important that this information be given in each case.

Books—Send us a postal for our list of agricultural books which we supply subscribers and which we recommend as most suited to California conditions.

Don't overlook this special:

The California Cultivator (weekly)
The Rural Californian (monthly)
} Both one year for $1.50

Our Money-Saving Combinations:

The price of the Cultivator and any single magazine may be obtained by adding 90c to the class price of the magazine desired.

Make up your orders from the following, noting that the class numbers multiplied by 5 gives the cost price. Also bear in mind that **all orders must include a year's subscription to the Cultivator (class 18) at 90c.**

MISCELLANEOUS

Class No.		Reg. Price
19	American Sheep Breeder	$1.00
47	Automobile	3.00
8	Boys' World	.50
23	Breeders' Gazette	1.75
27	Cassell's Little Folks	1.50
77	Century Magazine	4.00
65	Country Life in America	4.00
12	Designer	.75
8	Girls' Companion	.50
70	Harper's Weekly	4.00
70	Harper's Magazine	4.00
8	Ladies' World	$0.50
17	Human Life	1.00
9	McCall's Magazine	.50
12	Modern Priscilla	.75
15	National Monthly	1.00
70	North American Review	4.00
47	Outing Magazine	3.00
8	Reliable Poultry Journal	.50
40	Scientific American	3.00
60	Scribner's Magazine	3.00
57	St. Nicholas	3.00
15	Woman Beautiful	1.00
37	World's Work	3.00

CLASS 16.

Amer. Agriculturist	$1.00
Black Cat	1.00
Cooking Club Mag.	1.00
Delineator	1.00
Health	1.00
Housekeeper	1.00
Judge's Library	1.00
Judge Quarterly	1.00
Orange Judd Farmer.	1.00
Pacific Monthly	1.50
Pictorial Review	1.00
Progress Magazine	1.00
Sis Hopkins	1.00
Uncle Remus	1.00
World's Events	1.00

Any two $1.60

Any three $2.40

Any four $3.20

Any one with 1 of class 17 $1.65

Any two with 1 of class 17 $2.45

Any one with 1 of class 20 $1.80

Any one with 1 of class 22 $1.90

CLASS 17.

Amer. Bee Journal	$1.00
American Boy	1.00
Am. Primary Teacher.	1.00
Boston Cooking School Magazine	1.00
Camera Craft	1.00
Children's Magazine	1.00
Cosmopolitan	1.00
Dressmaking at Home	1.00
Electrician and Mechanic	1 00
Health Culture	1.00
Human Life	1.00
Little Folks	1.00
Motor Magazine	1.00
National Sportsman	1.00
Nautilus	1.00
N. Y. Tribune Farmer	1.00

Any two $1.70

Any three $2.55

Any four $3.40

Any one with 1 of class 16 $1.65

Any two with 1 of class 16 $2.50

Any one with 1 of class 20 $1.85

Any one with 1 of class 22 $1.95

CLASS 20.

American Magazine	$1.50
Columbian Magazine	1.50
Good Housekeeping	1.25
Harper's Bazar	1.25
Metropolitan Magazine	1.50
Pearson's Magazine	1.50

Any two $2.00

Any three $3.00

Any two with 1 of class 35 $3.75

CLASS 22.

Ainslee's Magazine	$1.80
American Magazine (after Feb. 25, 1911)	1.50
Amer. Photography	1.50
Baseball Magazine	1.50
Country Gentleman	1.50
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into rolls. Personally, I would work it carefully for about five minutes, not more, but less if anything, shape into rolls, and wrap at once in either parchment or cloth. The only reason for ever letting butter stand is that it might be too soft. I like to churn at fifty if possible, but often have had to churn at sixty, and it is possible to make good butter at sixty-five, but requires more care.—M. E. S.

Planer Shavings For Fertilization.

What is the value, if any, in sticker shavings, those produced by planing mills, for fertilizing citrus orchards? Shavings are of Oregon pine and redwood.—Subscriber, Escondido.

We saw one orange orchard near Los Angeles in which the experiment of using redwood shavings on about one-third of the trees had been tried. The application had been made the year before we saw the trees. The trees were yellow and carried but little fruit and looked most unthrifty, while the rest of the orchard not treated with application of shavings was bright green and in best of condition. The grower said that all other treatment of the trees had been the same. He insisted, and we have never heard it contradicted, that the redwood shavings were the cause of the trouble. We have heard others say that the Oregon pine shavings were not injurious. We imagine they would carry practically no fertility to the soil, but that the only effect would be mechanical. Any experimenting along this line should be carefully conducted; we should much prefer stable manure or green manure or other means of bettering soil conditions.

Legal Queries

Edw. L. Payne, attorney, 301-304 Douglas Building, Los Angeles, will answer legal queries in this department.

Immediate mail replies cannot be given except where fee to Mr. Payne is paid. When replies are wished in Cultivator address query to 115½ N. Broadway, Los Angeles.

Polluting Water.

A small creek starts on A's land and runs through B's pasture. Can A empty his sewage into this creek so that the water flowing through B's place is unfit for stock to drink? Can B prevent this pollution?—Subscriber, Napa.

If B has a right to have the water flow through his land, he also has the right to have it flow unpolluted, and B's remedy would be an injunction.—E. L. P.

Pastured Animals.

Is a person owning land and pasturing stock for a consideration of so much per month liable to the owner for any damage to said stock like getting crippled, straying or dying while in pasture? What recourse would the owner of pasture have against the owner of stock when the owner of the animals was unwilling to pay the pasture bill?—Subscriber, Lang.

The owner of the pasture is liable for any injury to the stock which is occasioned by his lack of ordinary care. If an animal became crippled because the one doing the pasturing neglected to do something which an ordinarily prudent man would have done under the circumstances, or did something which an ordinarily prudent man would not have done, he is liable for the injury. The owner of the pasture has a lien dependent on possession for his compensation in caring for, boarding, feeding or pasturing the stock. If he parts with the possession he loses his lien.—E. L. P.

VETERINARY

Answers in this column by Dr. Fred G. Matthews, are without charge. For immediate mail answer remit $1.00. In writing questions give full symptoms or particulars of injury of animal.

Founder.

Can you give remedy for founder of five or six years' standing? E. R. T., Ferndale.

Chronic founder is incurable. The treatment pertains more to the domain of horse-shoeing than medicine. Some recommend flat wide-webbed shoes applied after the sole and frog has been cleared of unnecessary prominences and exfoliated horn. At alternate shoeings leather pads over tar and oakum may be applied. Blister the skin just above the hoof, entirely around the foot, at intervals of three weeks, with a mixture of red mercuric iodide, one drachm mixed in one ounce of vaselin, rubbed into the parts thoroughly.

Contraction of Hoof.

My horse is affected with serious contraction of one of his front hoofs. Above the hoof a number of sores are coming, but at present there is a new growth of hoof showing. The trouble is so serious that the horse is quite lame and walks on the heel of the foot. Can you suggest cause and remedy?—Subscriber.

It is impossible to arrive at any definite conclusion as to the cause of the trouble in this case, but if the lameness appeared suddenly one would suspect a deep nail wound near the middle of the frog. Have the blacksmith search the sole and frog carefully for evidences of a wound. Soak the foot one or two hours, daily, in a bath of warm water, to which creolin is added to make a milk-white solution. When dry cover the hoof—frog, sole and wall—with a hoof ointment made of one part pine tar and three parts lard.

Rupture.

A filly one and a half years old was observed about three weeks ago to have a painless enlargement the size of an egg on the navel. A few days later there appeared a soft swelling around the enlargement, which now extends forward almost to the fore limbs. A liniment, which was supposed not to blister, was used on the part.—Subscriber, Lemore.

Every indication in this case points to the formation of a rupture (Umbilical hernia) at the navel. Take a strip of strong canvas, which is long enough to almost encircle the body and wide enough to extend from the flanks behind to the middle of the rib region in front, and attach five strong rubber band elastics, equal distances apart, across one end, and to the other end fasten cords corresponding to the elastics. These cords should be so placed that when tied into the elastic bands any desired tension can be secured. A simple breast-strap harness can be arranged to prevent the canvas from working back into the flank. Prepare a thick pad of cotton, place it on the navel, and adjust the canvas band so that continual pressure will be applied to the part. It is doubtful if this will effect a complete cure, but the size of the rupture which remains will be materially reduced, and later the colt may outgrow the trouble. Feed only concentrated foods, avoiding the use of bulky foods which tend to distend the abdomen. In fact, it would be well to limit the amount of grain given and allow the colt to become gaunt.—F. G. M.

General Agriculture

COMFORTABLE QUARTERS FOR HELP.

The perplexing problem of harvest help which has been worrying farmers throughout the Pacific Slope has been satisfactorily solved by at least one man in this valley, says the San Jose Mercury. For the past four years Homer A. Craig, now president of the Farmers' Union of the Union District, has been employing white help solely in harvesting his crop of prunes, with gratifying results therefrom. Owing to the utter unreliability of the Asiatic help, Mr. Craig first tried the experiment of employing young people, but the amount of time wasted and the poor results accomplished soon convinced him of the futility of depending upon them without mature persons to keep their exuberance within bounds.

Then it was that Mr. Craig conceived the idea of employing whole families and the results attained have been beyond the most sanguine expectations.

With the beginning of the fruit season the families—usually the mothers and children only—move into tents, which, supplied with woven-wire mattresses and sheetiron stoves, are furnished by Mr. Craig. Here they live during the fruit season, gaining health in the pure country air and at the same time earning a better wage for the time employed than could be obtained in the city. They are paid "by the piece," so that their own industry determines the scale of wage. Those children old enough to work pick up prunes beside the mother, while the wee tots, happy in the freedom of the country, play contentedly in the swings which have been hung under the big shade trees for their special amusement. Safely bestowed under the mother's watchful eye, the child plays about all day, gaining health and strength, the little face growing tanned and ruddy, the cheeks filling out round and full. The women have discovered the utility of overalls, and, unhampered by skirts, they work in the orchard in "blue jeans" and shirtwaists, while even the children have donned the "prune-picker's uniform."

And, if the hopes of the Farmers' Union, who are vitally interested in getting help to harvest their fruit crops, are realized, the next Legislature will change the vacation period so that the school children, with their parents, may "go camping" in the orchards, and while they grow strong and rugged in the healthful out-of-doors, they will be forming habits of industry, thrift and independence.

State Superintendent of Education Hyatt, who is always interested in anything looking to the welfare of school children, has signified his willingness to co-operate with the Farmers' Union in its plan to change or extend the vacation period to conform with the fruit crop.

County Superintendent D. T. Bateman and City Superintendents McClymonds of Oakland and Roncovieri of San Francisco are equally enthusiastic. The children cannot be kept out of school, but if the vacation period could be changed by an act of the Legislature to suit the farmers' needs it would solve the question of labor in gathering the fruit crop, would give the child a change of air and occupation and pay him well, besides, for a pleasant outing. An industrious 12-year-old can easily earn from 75 cents to $1 a day and still have time for the "good times" which healthy children crave and should have. Mothers earn from $1 to $1.50 a day, and have no expenses to pay except for food. The prune crop usually lasts about six weeks, and if the vacation period be extended so that the children could cut peaches and apricots, the season's work would be lengthened to fully two months or more.

BANQUET TO NATIONAL UNION PRESIDENT.

The farmers of Chico, Butte county, are enthusiastic believers in co-operation, co-operation in marketing, co-operation if possible in buying. The Farmers Union there recently tendered a banquet to National President Barrett of Georgia, who gave them a rousing address on co-operation which is more the life of business than competition.

In the Chico Enterprise we note the following regarding Mr. Barrett's address:

To meet with the greatest possible success agriculturally, attain the widest influence politically, and accomplish the best results educationally, it is necessary for the farmers to organize themselves into unions.

This is the day of organization, and the Georgia man says that if men living by the productiveness of the soil want to keep up with the times, and get the most out of their land and out of the world in an educational and financial way, they must follow the example set by capital and labor and organize. The speaker asserted that greater difficulties were to be met with in organizing farmers than almost any other class of men, laying the blame for this, mostly on those men among them who grow impatient if they do not see immediate financial benefits.

"Why, some of them even expect to get twice their money back the very day they pay their initiation fee," Mr. Barrett said.

It was only seven years ago that the first union was organized, and only five years ago that the first national union was organized, and yet, with all the early failures and discouragements, the national now has affiliated with it 3,000,000 members, representing every state in the union, and is growing rapidly, and accomplishing wonders in the way of greater profits, greater educational facilities and greater political influence.

"The farmers do not need to organize a new political party," said Mr. Barrett. "All they have to do is to stand together and ask anything they want from the old parties, either one of them, and they will get it mighty quick. If they don't they have it in their power to put their representatives in the state and national governments out of office."

Mr. Barrett told of different business enterprises that had met with success under the guiding hand of the union. Throughout the country they

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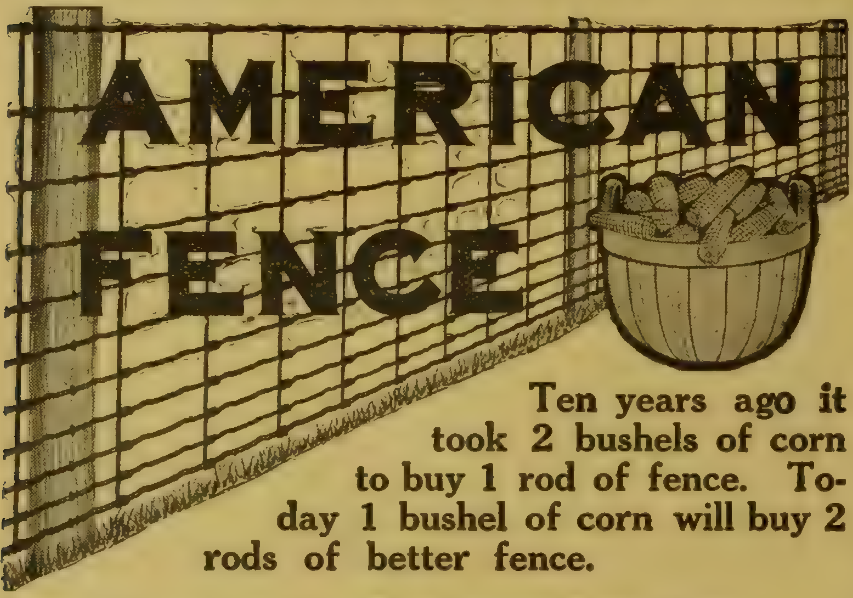

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have their own warehouses, their own co-operative stores, and in many places they have their own factories. He mentioned a fertilizer factory in the South that has 4000 farmer stockholders that is paying all these stockholders profits, and that has succeeded in cutting the retail price of the fertilizer in half.

"The South is more strongly organized than any other part of the country," said Mr. Barrett, "but the unions also have much strength in the East and Middle West. The finding of new markets and orchard products, he said, was the way in which the union benefited the farmers financially, and by their voting strength they get greater educational advantages and other legislative benefits.

GROUND SQUIRREL EXTERMINATION.

A subscriber of the Cultivator has expressed a wish for the latest on Squirrel Extermination, and knowing of the extensive investigations and the work of the Public Health and Marine Hospital Service of the Treasury department, we wrote Surgeon Rupert Blue and from him have the following:

Methods of Ground Squirrel Extermination.

"One method, applicable during the wet season when the green grass is out depends upon the use of liquid bisulphide of carbon, which is placed in the holes. A second depends upon the use of poisoned grain.

"A common method of applying bisulphide is as follows: From one to three days prior to the application of the poison all squirrel burrows in the area to be poisoned are well stopped with earth. The holes found opened, on arrival of the poison squad will indicate to them the burrows containing squirrels. Two men working together can apply the poison most rapidly and economically.

"One man is provided with a supply of 'waste,' 'sacking,' or other absorbent material, divided into a number of small balls about half the size of the fist. The bisulphide is carried in an ordinary one-gallon oil can, and refilled from time to time from a supply kept in a cool place out of the sun. He is supplied with matches. His 'pardner' carries a long handled shovel. On arrival at an opened burrow, a small ball of waste is saturated with two ounces of bisulphide, dropped deeply into the burrow and a match applied. After a moment's time the man with the shovel stops with earth this burrow, and all other burrows near from which the gas escapes. On subsequent inspection of the field all opened burrows will indicate holes lacking effective treatment.

"During the dry season some form of grain poisoned with strychnine will probably serve the purpose best. A formula for the preparation of poisoned barley is as follows:

Whole barley	20 lbs.
Starch paste	1 pt.
Strychnine sulphate	1 oz.
Saccharine	1 dr.

"The barley is placed in a receptacle large enough to permit thorough stirring, (as a wash tub). One pint of water is then brought to a boil and sufficient laundry starch, (about two tablespoonfuls dissolved in a little cold water) is slowly added to form, when well cooked, a paste about the consistency of cream. The strychnine, (first powdered if in crystals) and the saccharine, are now added to the hot starch-paste and the mixture well stirred until dissolved. While still hot this is poured over the barley, mixed well, and the whole put aside for several hours before using.

"This formula is recommended because of its simplicity, cheapness and effectiveness. Scatter a teaspoonful along the squirrel trails or on hard bare places near the holes. The poison should not be placed in heaps on the soft mounds at the mouths of the holes. It will probably be found most efficient if scattered early in the morning, between the hours of 3 and 7 A. M."

Surgeon Blue adds that work has been done in 29 counties of this state.

"I have also to state that this service, working in conjunction with the California State Board of Health and others concerned, is carrying on a campaign of squirrel extermination at the present time which consists of the making of squirrel free zones about the transbay cities and the shooting, etc., of squirrels in other parts of the state in order to determine the extent of infection among them."

The Year Book of the Department of Agriculture for 1908 contains "Use of Poisons for Destroying Noxious Mammals" in which the ground squirrel is referred to. Reprint slips of that paper may be had by writing the Department.

PICKING COTTON BY MACHINE.

The machine itself is about as inspiring a sight as the gin was in Whitney's day. It is a small, gasoline, traction engine, with two picking attachments swung under it, and a pair of canvas bags hung out behind. It travels through the field about as fast as a man walks, taking the cotton plant between the wheels, where it is picked over by almost countless revolving steel fingers which catch the lint but leave the plant uninjured, so that the later bolls may mature. To leave the unripe bolls has been the great difficulty in making a mechanical cotton picker. Cotton cannot be gathered all at once like wheat.

Cotton bolls on the same plant mature and open progressively, making the problem of mechanically picking cotton extremely difficult. A cotton picking machine to be commercially successful must be able to pick the open bolls without injury to the unopened bolls and blooms, or to the foliage of the plant itself.

The picking machinery is on two drums which hang from the frame of the tractor, one on each side of the cotton plant as the machine straddles the row. An endless chain of upright cylinders of small diameter follow each other around the drum. From these cylinders the needles which do the picking project horizontally into the plant. When the machine starts, everything moves with a motion of its own. The drum carries the cylinders around; the cylinders poke the needles into the plant at the proper angle, and the fingers turn and catch the cotton.

Every motion is delicately adjusted. The fingers move fast enough to catch the fibre, but not fast enough to throw it off. The cylinders bring each finger into place at the proper time, so that there is never a space large enough for an open boll to pass through without touching a finger. The drum is moving backward at the same rate that the whole machine moves forward, so that the picking needles do not move horizontally through the plant, but merely turn in it.—Arthur W. Page in The World's Work.

OLD FARMING AND NEW.

Illustrated by pictures of a farmhouse of the old order, a barn and barnyard of the yet all too familiar type, a pen of long horn, scrub beef steers of the old days, and, by contrast, pictures of the farmhouse of architectural beauty, the clean, capacious barn and yard and well-bred cattle, William R. Lighton writes entertainingly in a recent issue of the Saturday Evening Post, in answer to the question "What's an Acre Worth?" The article is a plain statement of a well-considered subject the opinions of which are strongly reinforced by observation and verified in many sections of the great West by experience that has trailed slowly along the path of agricultural development.

"Until the generation in which we now live the farmer has never known what he was doing or why he did it," says this writer. This statement is true, except in the most literal sense. The farmer who plowed his land knew that he was plowing; casting seed upon the newly-turned soil, he knew that he was sowing. Of the result of the process there was not the slightest degree of certainty. Weather permitting and blight failing to appear, he hoped and even expected to harvest a fairly good crop—i. e., a crop that would yield food for his family, seed for the next planting and sufficient surplus to pay the tax upon the land, or, if a mortgage covered it, interest upon the mortgage. He was always looking and hoping for the exceptional year of over-average abundance that would enable him to reduce the amount or mayhap lift the mortgage; yet he brought nothing more substantial than hope and expectation, supplemented by tireless, delving industry toward this end.

In the great abounding West, where the soil was more generous than that of New Englnad, though the climate was not less vigorous, and on to the Pacific Northwest, where both soil and climate favored abundant harvests, the story was repeated—the story of not knowing how to make the earth give of her store in return for favors bestowed in cultivating.

This represents an era that, though not entirely of the past, is rapidly passing. "The old order changeth," and, says Mr. Lighton, "the change is sweeping the farms with a swiftness nothing short of miraculous. In all the human story there is no more bitter, utter tragedy than the age-long groping and fumbling of the farmer for understanding—the man who was feeding the world in the sweat of his overburdened body. Our century can show no greater glory than the awakening of intelligence in relation to the work of the farm. It's the biggest thing that ever happened."

And it is happening, working out all around us. At first and for some years the farmer resented hotly or scornfully the suggestion that he needed to be taught how to farm his lands to the best advantage. More often than not it was the farmer-legislator who opposed an appropriation of money for agricultural schools; now it is the farmer-legislator who urges this appropriation, and the lawyer or mechanic or tradesman who sits across the aisle from him cordially joins in the proposal and the appropriation is voted, practically without opposition. Besides, continues Mr. Lighton, there are the farmers' institutes. Once these were meetings of men who came to talk politics and swap grouches; now they are schools of instruction led by the best of the university faculty members and attended by as eager a lot of students—graybeards and younglings alike—as ever gathered at the call of a new idea.

Behind all this and much more, and instigating all and suggesting much more, is the Federal Department of Agriculture. Since the farmer's interests have been represented in the Cabinet agriculture has come to be recognized as a science, the gradual unfoldment of which is a thing of study and of years. Experiment and intelligence have joined hands in its development, and a grand beginning has been made, which, pushed to its logical sequence, will make the farmer's vocation in reality what it has long been in theory, the synonym of independence and plenty.

While many farmers— a majority, perhaps—still pursue the full routine of haphazard farming, with results that correspond—not with the effort made, but without the knowledge that should direct the effort—the new farmer, with his well-digested knowledge of crop-breeding and soil chemistry and his training in applied economics, has raised farming to the rank of a scientific profession. "He is obeyed by the forces that held his father captive."—Portland Oregonian.

TREATING WHEAT FOR SMUT.

At threshing time this summer a great deal of the wheat in certain parts of the Territory was noticed to be affected by smut, which caused a considerable amount of financial loss to the farmers. Much of this might have been avoided, and may in the future be prevented, by treating the seed before planting, as the disease is caused by spores carried over from year to year on the seed.

There are two distinct kinds of smut that affect this crop; loose smut, and stinking smut. It is the latter that is giving the trouble, and it is this one that is so easily treated. The treatments advised are many, but two methods have been found most satisfactory from the standpoint of economy, ease of treatment and effect.

Formalin treatment. This is perhaps the easiest of all the treatments, and repeated experiments have proven its efficiency. Sixteen ounces of 40 per cent formalin is used in 40 gallons of water and the grain is allowed to soak in the solution for about 30 minutes, after which it is removed and allowed to dry thoroughly. Care must be taken to insure thorough drying to prevent mould. A good way to manage the soaking is to place the grain in coarse sacks of a small size and immerse it in the solution. Many, however, prefer the sprinkling method, which consists of making up the solution in the same strength, and sprinkling it over the seed, which have been previously spread out in some convenient place. About a gallon should be used to the bushel of grain and great care should be exercised in order that no seed escape the treatment. When thoroughly sprinkled they should be covered in the pile with old sacks or canvas, and left until the next day, when they should be uncovered and thoroughly dried. Seed thus treated may be kept many months before planting.

Where infection is bad and the smut is giving a great deal of trouble all sacks, drills, and everything with which the seed comes in contact, should be treated with the same solution.—J. H. Squires, Agronomist, New Mexico Col. Ag.

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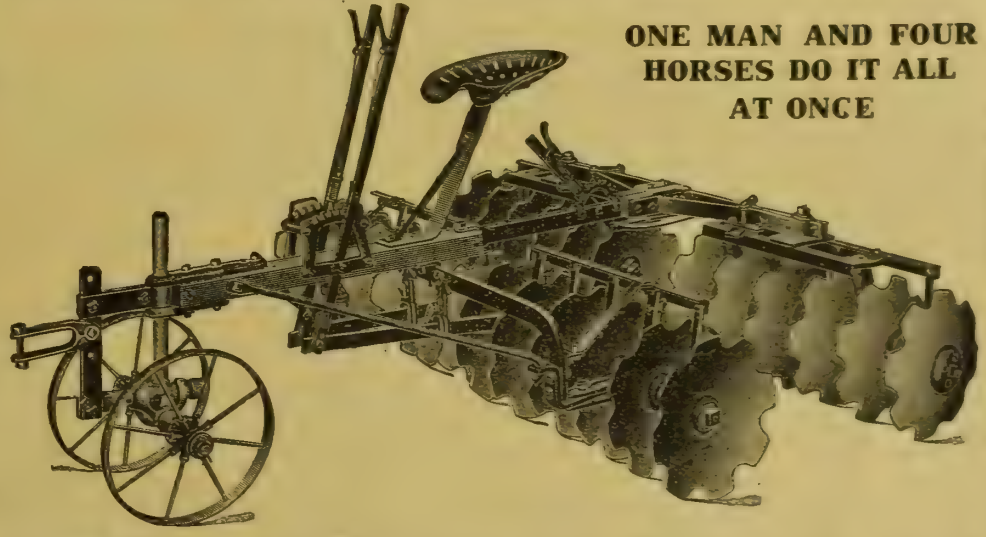

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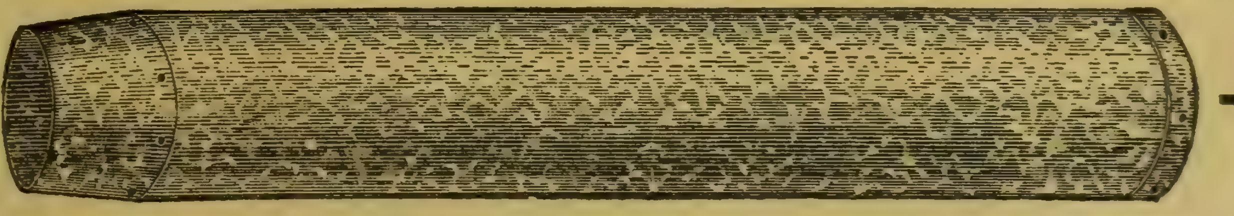

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A few young White Hornless Swiss Saanen Grade Milch Goats for sale. Mrs. E. Banta, Calistoga, Cal.

Angora Cat—Splendid blue tom by Blue Boy out of imported Fluffy, $50.00. B. A. Stocker, San Luis Obispo, Cal.

Registered Shorthorn Bulls and **Poland China Hogs** for sale. Best breeding. P H. Murphy, Perkins, Cal.

WANTED.

Wanted—Four or five hundred two or three-year-old seedling grape fruit trees, first class, grown from straight seedlings seeds (not budded seedlings seeds), three-quarters to one inch in diameter, 2½ to 3 feet high; must be growing in the nursery and never budded, clean and free from scales. State price. E. S. Lewis, Ontario, Cal.

Wanted—Your work pays the expense to learn a trade that pays $5 a day, in a few months' time; electricity, automobiles, plumbing, bricklaying; actual contract jobs; 200 students last year. United Trade School Contracting Company, 647 Pacific Electric Bldg., Los Angeles, Cal.

Dairyman and experienced agriculturist wishes position on ranch where he can manage for share of profits. Will make good. Reply early. Address Box "B", Cultivator Office.

A Young, honest, industrious American, thorough High School education, willing worker, trusted anywhere, wants position on some large cattle or dairy ranch. Best of references. Address Box P, Cultivator.

Help Wanted—We want several good solicitors to solicit for a high class suburban monthly publication. Good profitable employment to the right party. For particulars address Box H, Cultivator Office, Los Angeles.

Wanted—From one to three thousand acres of land. Wm. Paramore, Hollywood, Cal.

TREES.

Ornamental Eucalyptus—Cleanest and best shade trees for the ranch. Acacias, pines, etc. Large stock. Ballou's Nursery, 728 East Orange Grove Ave., Pasadena, Cal.

Write for Special Price on peach trees and French prune trees, on Myrobolan root. Gridley Colony Nursery, Gridley, Cal.

Marsh Seedless Grapefruit—600 large trees for sale. E. S. Thacher, Nordhoff, Cal.

Black Walnut Selected Trees—One and two years old, 2 to 8 feet high. Also seedling peach trees, good stock, and Maliner Keen Horseradish sets. A. P. Henning, Clements, San Joaquin Co., Cal.

Eucalyptus—200,000 Rostrata and Tereticornis. Ready for fall delivery, 6 to 12 inches, $7.50 per thousand, F. O. B. Pomona. Logan Russell, Pomona, Cal.

For First-Class Valencia and Navel Orange trees and Eureka lemons, see A. G. Snow, Oxnard. Cal

Fine Line of Navels—Valencias and Eureka lemons for delivery spring of 1911. Contract now and get the first choice. The King Citrus Nurseries, Whittier, Cal.

NURSERY STOCK.

For Sale—At a price that will move them; 50 Poinsettias (in gal.) at $12.50; 200 Acacia Melanoxylon, in 4-inch pots, $15.00; 200 Acacia Melanoxylon, in gal., $35.00; 200 palms Phoenix Canariensis, in gal., 2 years, $30.00; 200 palms Phoenix Canariensis, 2 feet, balled, $45.00; 200 Guavas Strawberries), in 4-inch pots, $15.00; 200 Guavas (Strawberries), in gal., 35.00; 150 large and very fine pines, 10 to 12 feet, $150.00. These prices are only good for lots as stated above. Address H. L. Bauer & Son, 737 S. Spring st., Los Angeles, Cal.

Having bought our seed of Luther Burbank, who guaranteed it selected seed, mostly from Giant Crimson Winter Rhubarb, we feel in shape to offer choice Crimson Winter Rhubarb plants for this year's planting at reasonable figures. Write for particulars. B. B. Currier, Sea Bright, Cal.

Rivera Nursery, L. L. Bequette, Prop.—Wholesale and retail dealers in Northern and semi-tropical trees, shrubs, roses, green house plants, etc. Have good stock of apples, peaches, etc. Send for descriptive price list. 625 S. Breed St., Los Angeles, Cal.

Our Descriptive Price List No. 2 contains all novelties exhibited at the Pasadena Flower Show, also other new introductions by Dr. Franceschi; mailed free on application. Montarioso Nursery, Box 1500, Santa Barbara. Cal.

Strawberry Plants—Fine ones. A No. 1. Dollar and Jessies $3.00 per 1,000. Special prices on larger orders, or to the trade. J. A. Powell, R. D. 1, Box 1, Ripon, Cal.

Crimson Winter Rhubarb plants for sale, reasonable. Clair Bishop, Alta Vista Ranch, Highland, Cal.

Improved Superlative Red Raspberry Plants—Largest raspberry in cultivation. 100 plants, $5.00. Send for description. William Richard, 438 River St., Santa Cruz, Cal.

RARE PLANTS.

Wild Plant Improvement Gardens, Santa Ana, California. Newton B. Pierce, proprietor. Rare choice ornamentals and new fruits from all lands

For Sale—Fine stock plants of Yellow Major Bonnaffon Chrysanthemums at 50c per dozen, $3 per 100. Also other varieties. Langley J. Goodman, R. F. D. No. 1, Box 22, Los Angeles, Cal.

Ahuacates, Alligator Pears (Persea Gratissima). Fresh Mexican seeds, none better for stock; $4.50 per 100 seeds; $40.00 per 1000 seeds. Montarioso Nursery, Box 1500, Santa Barbara, Cal.

FARM LANDS FOR SALE.

For Sale—A 20-acre farm for $20 cash and $20 a month; possession now; $90 to $125 per acre; your crops pay for the land. Rich, level land for alfalfa, oranges, almonds, grapes, cows, chickens; abundance of ditch water, for irrigation, for $1 an acre a year. Where else can you get this? In Oakdale Colony, near good town and railroad station, climate delightful. T. Wiesendanger, 207 S. Broadway, Los Angeles, Cal.

For Sale—155½-acre ranch in Owens Valley. 120 acres in cultivation, balance good pasture. 12 acres in 2-year-old Winesap apples. Work stock, farm implements, milk cows and 100 head hogs. Ranch 2½ miles from county seat. Mountain water, continuous flow, no assessments. A good opening for dairy or creamery. Address owner, Box 52, Independence, Inyo County, Cal.

For Sale—815 acres in San Luis Obispo County. A typical dairy ranch. Plenty of wood, water, irrigable land, buildings, fenced and cross fenced. Orchards, vineyards, oranges, lemons and walnuts do exceedingly well here. Forty acres of land suitable for these. Price $21 per acre. For further particulars apply to Mrs. F. A. Clink, Pozo, Cal.

Tulare County—652 acres at $42.00 per acre. Good terms. One-third mile from switch and flag station, main line S. P., 2 miles from town and school. Over 600 acres of this, the very best, level alfalfa land. Unlimited pumping water at shallow depth, besides artesian water deeper. Electric power line near. Fine for subdivision. C. H. Biggin, Pixley, Cal.

For Sale—Ranches and country homes specialized. Exchange and market for this class of property. Accurate and reliable information always. Full particulars of beautiful and profitable home with acres. Parrish Barker, 207 Union Trust Bldg., Los Angeles.

60 Acres in Santa Clara County. A splendid dairy ranch. Good barns, dwelling and water supply. ¾ of it in excellent stand of alfalfa; close to railroad; one hour's run from San Francisco. Address 281 North Third St., San Jose, Cal.

Irrigated Land—The famous Gridley Colonies. Improved lands, best homeseekers' proposition in California. Write for particulars. Gridley Land Co., Gridley, Cal.

For Sale—El Cajon Grant Land. Virgin soil, 4 miles to railroad, good farm land at $30 to $60 per acre. S. B. Hawley, 1548 D St., San Diego, Cal.

Cuba—Most productive soil. Delightful and healthful climate. Ample rainfall. Cheapest transportation facilities to the world's greatest markets. Particulars free. Sanderson, 13 Palace Building, Minneapolis.

Apple Orchards—Large and small, in the only apple producing section in California. The greatest section west of Missouri River. Write for booklet. Geo. W. Sill & Co., Watsonville, Cal.

MACHINERY

For Sale—Second-hand windmills, tanks, engines, farm machinery that will do same work as new at half price. 140 ft. 2½-inch standard at 9½c; 8 ft. steel aeromotor windmill complete with tank and pump, $48. Small distillate tanks, 50 gallons up. Domestic and irrigating tanks, galvanized and 500 to 10,000 gallons, also 50,000-gallon tank, fine for storage. 8 fine stock tanks 8x3 ft. Steam engines with steam pumps; gasoline engines, 2 h. p. engine, pump jack, pipe, pump complete; also many other sizes. 12 h. p. Fairbanks engine, No. 2 deep well Ames double-acting pump jack, 65 ft. casing, rods, and double-acting cylinder, 50 ft. belt, price $380 on cars if taken before we have to move it. Gang, disc, road, riding, walking plows, feed rack. Fresno and slip scrapers, wagons, surrey, grading tools, sundries. Demmitt Co., upstairs, 120 N. Main, Los Angeles.

For Sale—A good portable drilling rig, good for 800 ft., complete string of tools. About half its value, at $750.00. Address M. H. Magie, 1242 Harvard Blvd., Los Angeles, Cal.

For Sale—16 h. p. distillate engine, recently thoroughly repaired. If you want a bargain see us. Machinery Exchange, Main and Bruno Sts., Los Angeles.

For Sale—11 h. p. White & Middleton gas engine. Newly fitted up throughout. Looks good as new. Cheap. Bailie & Brandt, 943-945 N. Main St., Los Angeles.

For Sale—One No. 3 Ames pump, 125 ft. of rods, 8 inch cylinder, also one 22 H. P. Fairbanks-Morse engine. All for $1,000.00. 1½ miles north of Olive, ¾ mile south of Richfield. J. H. Gulick, Olive, Cal.

TURKEYS.

Mammoth Bronze Turkey Toms, spring hatch, from Howard strain. Could not supply the demand last year; a word to the wise is sufficient. Also pedigreed female Scotch collie pups. Mrs. A. C. Wisegarver, San Fernando, Cal.

Thoroughbred Mammoth Bronze turkeys 8 mo. old, of large size and fine markings. Toms $8, hens $6. Can sell you toms and hens not related. Mrs. Nellie Hart, Holtville, Cal.

Bronze Turkeys for sale. Good stock at $3 to $4 each. L. Haynes, Madera, Cal.

BELGIAN HARES.

For Sale—Choice Belgian Hares. Thoroughbred stock, 50c up. Write for prices. J. K. Pierce, R. F. D. No. 2, Box 15, Petaluma, Cal.

LAND FOR RENT.

To Lease for term of years, 17 acres alfalfa land, pumping plant, reservoir, all in first class order; within city limits of Chino. Will make good truck farm. J. Lenert (owner), Chino, Cal.

HORTICULTURAL PRINTING.

The Kruckeberg Press, 123 South Los Angeles St., Los Angeles, Cal., makes a specialty of Horticultural Printing and Engraving. Cuts and illustrations of all standard, economic and ornamental plants on hand and subject to the use of patrons without cost. Samples and estimates cheerfully furnished. Remember, we design, write, engrave, bind and print; in brief, do the "whole thing," at no additional expense to the customer. Correspondence a pleasure.

POULTRY.

How to Make Money—Mrs. A. Basley's New Poultry Book is just out. It is without exception the most wonderfully complete manual on the subject of successful poultry management ever written. The secret of how to raise every turkey hatched and the "Basley Formulas," now published for the first time, are worth many times the price of the book. The "Western Poultry Book' is a practical book by a practical woman Price $1.00. Address Mrs. A. Basley, Box 77, Venice, Cal.

Hayes, R. B., Poultry Fancier and Rhode Island Red Specialist—30 breeding pens of Reds, 20 pens miscellaneous varieties. See our birds, they tell their own story, or write for circular. Eggs for sale only. Yards in Arroyo, opposite Ostrich Farm. Box 35, Garvanza Sta., Los Angeles, Cal. Phone East 1631.

LOVELL'S BLACK MINORCAS
California's
Greatest Egg Producers
Pedigreed, trapnested, scientifically bred Free circular. DAVID J. LOVELL, 5720 So Park Ave., Los Angeles, Cal.

Day-old Chicks from my pure bred and carefully selected stock of S. C. White Leghorns from January 15 to February 15, $10 per 100; after February 15th, $9 per 100. Spring orders taken now. J. R. Heinrich Poultry Yards, Arroyo Grande, Cal., San Luis Obispo County.

Magnolia Poultry Farm—S. C. White Leghorns (Wyckhoff stock). Vigorous, healthy birds, good layers, large, white eggs. Eggs, $2.00 per 15; $3.00 per 30; $7.50 per 100; $60.00 per 1,000. C. H. Hosford, 351 Magnolia ave., Riverside, Cal.

Schellville Hatchery—Thoroughbred Leghorns, Black Minorcas, R. I. Reds and Barred Plymouth Rock chicks hatched from heavy layers. Strong chicks and safe delivery guaranteed. Sonoma, Cal.

White Orpingtons—Finest utility stock on coast. Heavy layers. Eggs $5.00 per setting of 15; $25 per 100; baby chicks, 50c each. H. E. Dickinson, R. F. D. 1, Napa, Cal.

Booking orders for day-old chicks at 12c for January delivery and later. White Leghorn eggs at $2.50 per setting, $6.00 per 100. Sussex Poultry Manor, Los Gatos, Cal.

BONNELL'S S. C. BLACK MINORCAS
WIN EVERY TIME
Eggs for hatching after Jan. 15th. C. C. Bonnell, State Vice-President American Black Minorca Club, 2919 Brighton Ave., Los Angeles.

I Hatch White Rocks Exclusively—Chicks $15 per 100 from a heavy laying strain of prize winners. I am booking orders now for later delivery. Can supply stock from 1 to 10 weeks old. Write for prices. J. Wesley Lord, Inglewood, Cal.

For Sale—100 thoroughbred Indian Runner ducks, in splendid condition for the coming season's breeding. Also trio of Kellerstrass strain Crystal White Orpingtons, 7 months old, $15. C. E. Rawson, 4650 Sunset Blvd., Los Angeles.

For Sale—Buff Orpington pullets and cockerels, thoroughbred. One Rose Comb Black Minorca cockerel, Wheeler Strain. Maude A. Chapman, Rose Hill Poultry Farm, Folsom, Cal. R. F. D. 1.

We are now booking orders for day-old chicks, White and Buff Orpingtons and R. I. Reds from thoroughbred stock. Very best winter layers. Vallejo Poultry Yards, 208 Frisbie St., Vallejo, Cal.

Petaluma Hatchery—Capacity 50,000 eggs. We are booking orders for spring. Write for circular. L. W. Clark, 615 Main St., Petaluma, Cal.

For Sale—White and Buff Wyandottes from best strains. W. C. Parker, 113 Pacific Ave., Santa Cruz, Cal.

Lodi Hatchery—Just hatched, White Leghorn chicks from healthy, heavy laying stock. Booking orders for later delivery. T. C. Hawley, 504 E. Elm St., Lodi, Cal.

Single Comb Brown Leghorn Eggs—$5.00 per hundred, $1.50 single setting. **Mrs** E. Foran, Box 445, Visalia, Cal.

Poultry Wanted—We pay the highest market price for all the local poultry we can get, no matter how large the quantity; also fresh ranch eggs. We remit immediately Allaway & Layton Co., 607 E. 3d St., Los Angeles, Cal.

Pacific Hatchery—Baby chicks, incubator eggs, and selected thoroughbred poultry, ranch raised. W. W. Clough, Ontario, Cal.

Orland Hatchery—Just hatched White Leghorn Chix. Booking orders for later delivery. P. L. Simpson, Box 13, Orland, Cal.

Baby Chicks and Eggs for Hatching—Orders now taken for January and later delivery of R. I. Reds (Tompkins Strain), White Minorcas and S. C. Black Minorcas (Northrup Strain). C. U. Chamberlin, Los Gatos, Cal.

FOR THE HOME.

Raisins—Recleaned, ready for use, Thompson Seedless Raisins, absolutely free from all stems and dirt. Cleaned by machinery. Housewives' delight. Better than candy for the children. Nature's own health food. Drop us postal for sample, or send $3.00 for 50-pound box. Fowler Fruit Co., Fowler, Cal.

Raisins—Producer to consumer, new crop loose Muscatels in 50-lb. boxes, 2 crown, 4c; 3 crown, 4½c; 4 crown, 5c; guaranteed. A. H. Dugdale, Etiwanda, Cal.

ASPARAGUS PLANTS.

Bonvalliets Giant, new Chicago variety, $5.00 per 1,000; Palmetto, $4.00 per 1,000. Plant early. Deciduous fruit trees in dormant bud, $5.00 per 100; will pack light. D. Turner, Phoenix, Arizona.

REAL ESTATE.

Farms Wanted, Sale or Rent; also town lots and homes. Clients prepared to buy; send particulars and lowest price. Ferguson, National Realty Co., 505 Fifth Ave., New York.

Farms Wanted—Don't pay commissions. We find you direct buyer. Write, describing property, naming lowest price. We help buyers locate desirable properties free. American Investment Association, 12 Palace, Minneapolis, Minn.

DAIRY SUPPLIES.

Have You a Cow?—Have you a creamery? Have you a cheese factory? Write us. Everything used in either a dairy, creamery, cheese factory, or for handling milk, cream, butter, or cheese. We are in a position to quote you prices on entire creamery or cheese-making outfits. We make a specialty of only the latest and best sanitary machinery and supplies. Send us a list of what you want and we will quote prices which we feel certain will interest you. O. J. Weber Co., 225-227 East Sixth St., Los Angeles, Cal.

Milk Coolers, Bottles, Caps, brushes, Buhl milk cans, Sharples separators, Babcock testers, veterinary instruments, wood soled boots and shoes, and our celebrated "Prosperity" washing powder. Guy F. Kelsey, 108 E. 8th St., Los Angeles, Cal.

Business Notes

1911 PRICE LIST.

The Fresno Nursery Co., of which F. H. Wilson is proprietor, has just issued its twenty-first annual price list. It gives quotations for this season on practically all deciduous and citrus fruit trees and a large line of ornamental trees and shrubs. Of course, as usual, this nursery is making a specialty of rooted grape cuttings, both on their own roots and resistants These vines are guaranteed to be entirely free from disease and healthy in every particular. The list may be had by writing Chas. A. Chambers, Sec'y, Fresno.

WRONG ADDRESS.

An error in the address of Jas. R. H. Wagner and H. S. Cook of 329 South Hill St., Los Angeles, on page 515 of the issue of November 24th has caused much annoyance and possibly loss to some readers who were seeking the information offered by Messrs. Wagner & Cook. Instead of 329 South Hill St., which is the correct number, it was made to read 239 South Hill St. Any inquirer who has written enclosing coupon in that advertisement and has not received the information will do well to drop a post card to Jas. R. H. Wagner and H. S. Cook, 329 South Hill St., Los Angeles, Cal.

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Write for Catalogue 104.

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LANGDON'S TOMATOES

"I have tried all the various strains of Earliana on the market, and yours is the only one I have found that meets my idea of what a good early Tomato should be."—Prof. W. F. Massey.

By seven years' selection we have produced the **Earliest, Hardest,** and **Smoothest** Tomato ever grown. Our location near the Canadian line tends to breed in earliness and vigor, for we have no blight. All our seed is home-grown, is extra large and plump, starting strong, vigorous plants. Send for our circular and get more inside facts.

If you want to be first on your market with perfect Tomatoes that will bring a premium over top-notch prices, plant **Langdon's Northern Adirondack Strain of Earliana Tomatoes.**

Price: ½ oz. 40c; 1 oz. 60c; 2 oz. $1.25; 4 oz. $2.00; 8 oz. $3.50; 1 lb. $6.00. A limited quantity of fancy seed from **Selected Crown** settings, ½ oz. 75c; 1 oz. $1.25, postpaid.

F. & H. P. Langdon, Maple Ridge Farm,
Constable, N. Y.

Household Department

I WILL.

I will start anew this morning with
a higher, fairer creed;
I will cease to stand complaining of
my ruthless neighbor's greed;
I will cease to sit repining when my
duty's call is clear;
I will waste no moment whining and
my heart shall know no fear.

I will look sometimes about me for
the things that merit praise;
I will search for hidden beauties that
elude the grumbler's gaze;
I will try and find contentment in
the paths that I must tread,
I will cease to have resentment when
another moves ahead.

I will not be swayed with envy when
my rival's strength is shown;
I will not deny his merit, but I'll
strive to prove my own;
I will try to see the beauty spread
before me, rain or shine—
I will cease to preach your duty and
be more concerned with mine.
—S. E. Kiser.

A DETERMINED ADORER.

The young of all domestic animals are susceptible to human kindness, and respond to it, each according to his kind; some with winning grace, as the pet bird which greets you with a whispered "Sweet! sweet! sweet!" its wings trailing and its little body quivering with ecstasy; or as the pet kitten, which squeezes your caressing hand to its breast with its small furry arms, while its half shut eyes seek yours, brimful of the mysterious love of the brute towards man; not to mention the well-nigh human expression of his heart's adoration given by the noblest of them all, the dog. But how are we to characterize with due respect an exhibition of poor piggie's tenderness? His affection may be as deep as theirs yet who can prize assurances given with a moist snout printing impressions of itself all over your polished boots, to the music of ventral "grumphs?"

Also we humans have set up arbitrary fashions in animal companionship which the animals themselves often rebel against; thus the dog may follow us in public and no one smile, but not the cat; and as for a pig—oh, fie! Be it pink and small as a candy toy, be it playful as Puck, tender "as a baby's sigh"—never in the world!

And yet the best of men cultivated the friendship of a pig—with results, I admit.

He was a country parson, and had enough ground attached to his parsonage to support a horse and cow, not to mention the smaller animals which thrive on farm produce.

They all knew him, down to the little pig, whose home was in a parson-built sty (from which he was always escaping), and vied with each other in claiming his attention; for, parson-like, he was unaffectedly fond of the lower creation.

One Sunday morning an unusually large congregation assembled in the pretty white church just across the road from the parsonage grounds; it was the twenty-fifth anniversary of his pastorate among them, and the ladies had presented him in honor of the occasion with a handsome new silk pulpit gown which he was expected to wear.

The service was over; the parson had shaken hands with some scores of kind souls who wished to show their affection—and well he deserved it—and had started down the road towards his own gate some fifty feet away, when up scrambled Piggie from the shadow of a rock some distance on the other side of the gate, and trotted to meet his beloved master.

The parson foresaw a fiasco, and quickened his stride, his silken gown flowing around his stately figure (for there was no vestry to disrobe in), if he could reach the gate first he thought he could shut it between him and his too pushing adorer, and "the incident would be closed," in diplomatic language.

But the longer his strides grew the faster piggie plied his trotters, while his gentle squeaks of pleasure rose to excited squeals; the parson sprinted; his gown billowing gloriously out behind him, and piggie galloped.

The people stared at the mismatched pair in stricken amaze.

The parson reached the goal first and tried to slip through the gate and slam it in piggie's face, but piggie's blood was up; he charged, head down, sent the gate crashing wide, and shot through like a catapult.

Ill luck directed his course between the reverend gentleman's legs, while the shock struck them from under him, and set him down astride his assaulter; and with porcine shrieks of fright the burdened beast tore up the driveway, while his rider, face to the rear, struggled desperately to free himself from the entangling swathes of silk which bound him to his undesired mount.

Such a roar of laughter as followed them! There was not a soul there who did not revere their pastor above all men, and for worlds they would not have wounded him; but the sight was really too funny, and for a minute they laughed till they cried. Only for a minute, though, then some one hoped he would not be hurt, and the joke was no longer laughable.

A couple of the best runners started in pursuit, and overtook the pair near the house, separated by this time, and stationary. The parson, stripped of his gown, which was carefully folded up and laid on the grass, was gently prodding up and down piggie's backbone, while that worthy "grumphed" complacently.

"I think he's not harmed, he doesn't wince at all," said the parson in a tone of relief. "But I'm sorry about the gown, I don't know how I can face the ladies who were so good," and he ruefully displayed several long slits in the ecclesiastical vestment which effectually ended its career. "Am I hurt? No, no, not in the least, thank you; though the rascal did knock the breath out of me." And he laughed as heartily as his people had done as he realized the figure he must have cut.

Wounded vanity was as impossible to the good man as anger at a brute, however provoking it had been; and the only punishment inflicted on piggie was the securing of his pen so that he could no longer supply "a little diversion after the service," and a noble trough of warm swill to sweeten his captivity.—Green's Fruit Grower.

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Do Your Banking
By Mail
Your Money
Will Earn
Four Per Cent
Four per cent per annum is paid on sums deposited with this bank for a period of six months. Interest is payable semi-annually, and if not withdrawn is added to the principal, thus creating a constantly increasing sum, which continues to draw interest at 4%.
Write for particulars of our "Banking by Mail" plan.
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Sixth and Main Streets Los Angeles

"See the shadow the book throws across my waist? It's like the shadow caused by the metal burner or tank of your light—with this difference, I can take away the book and get direct, shadowless light. See the point?"
MORE LIGHT
—where more light is needed—that's what The Angle Lamp gives. It is oil lighting at its best with the smoke, odor and bother eliminated by new methods. It throws upon book or table a direct shadowless light delightful to read or work by.
THE ANGLE LAMP
resembles a handsome gas chandelier in its appearance and in its convenience. It is lighted and extinguished like gas. May be turned up full or turned low without odor. Safely filled while burning. Requires filling once or twice a week. Floods every corner of the room with a splendid light. Costs about 3 cents per week.
Made in 32 varieties, a style to suit every need and taste.
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Established 1869. Incorporated 1890.

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Over 61,000 Open, Active Accounts
4% Interest on Savings Accounts
And on Six Month's Certificates of Deposit
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Which Accounts may be checked against without presentation of Pass Book. Interest is paid monthly on the minimum monthly balances provided it amounts to $300 or over.
The Safe Deposit and Storage Department is the largest and best equipped in the West

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AVERY THIRTY H. P. UNDERMOUNTED
OIL-BURNING STEAM TRACTION ENGINE
☞ FOR SALE CHEAP

* * *

This Engine is equipped with all approved time and labor-saving devices. It has been slightly used for experimental work only and is warranted to be in first-class condition.

AVERY COCKSHUTT PLOW—ten 14-inch steel bases, especially for this engine—will be sold cheap. It is brand new—has never been used. The Cockshutt Plow has won first prize at all international plowing contests for the last three years.

Both Engine and Plow will be sold below factory cost, and we will be glad to mail you full description and p ' es. This is a real opportunity to buy a first-class outfit at big saving over the cost of inferior goods.

* * *

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Farm Lands in Mexico
For agricultural, horticultural, and gardening purposes.
Shallow well-water, flowing river-water, and summer flood-waters for irrigation.
Improved, partially improved, and wild lands, all at very low prices.
Subdivisions near the business centers of the States of Sonora and Sinaloa.
Odd tracts and ranches of all sizes.
Weekly parties arranged by us. Rates are less in this way.
Send or call for descriptive literature, and Weekly Bulletin of prices.

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FOR RELIABLE SEEDS

Complete stock of garden and field seeds. Nursery Stock and Berry Plants of all descriptions. We sell direct to the farmer at lowest market prices. No goods sold to dealers. All seeds are tested by us at our nurseries. Send for our complete catalogue, which will be mailed free of charge. This catalogue contains information not only on gardening, but also how to grow Eucalyptus for profit.

CHAS. WINSEL - - - - Seedsman
251 South Main St., Los Angeles, Cal.

THE FARMER'S WIFE.

"Above all, the conditions of farm life must always be shaped with a view to the welfare of the farmer's wife and the farm laborer's wife. To have the woman a mere drudge is at least as bad as to have the man a mere drudge. It is every whit as important to introduce new machines to economize her labor within the house as it is to introduce machinery to increase the effectiveness of his labor outside the house.

"I haven't the slightest sympathy with any movement which looks to excusing men and women for the nonperformance of duty and fixes attention only on rights and not on duties. The woman who shirks her duty as housewife, as mother, is a contemptible creature; just as the corresponding man is a contemptible creature.

"But the welfare of the woman is even more important than the welfare of the man; for the mother is the real Atlas, who bears aloft in her strong and tender arms the destiny of the world. She deserves honor and consideration such as no man should receive. She forfeits all claim to this honor and consideration if she shirks her duties. But the average American woman does not shirk them; and it is a matter of the highest obligation for us to see that they are performed under conditions which make for her welfare and happiness and for the welfare and happiness of the children she brings into the world.—Theodore Roosevelt's Address to Farmers at Utica.

BLEACHING MUSLIN.

Place a boilerful of deeply blued water on the stove and unroll the muslin; put it into the boiler and let it come to a steady boil; boil five minutes, lifting and stirring, then remove from the boiler and, without wringing, hang on the line to drip dry in full sunlight. When dry, iron, and depend on the first washing to make it a clear white.

Another: Into eight quarts of warm water put one pound of chloride of lime; stir this with a stick until all is dissolved. Add to this five pailfuls of warm water; stir it well then put in the muslin. This quantity will bleach about twenty-five yards of muslin. Let it remain one hour in the lime water, turning it over occasionally, so that every part will be thoroughly wet. When taken out, wash through two waters to remove the lime, and hang on the line to dry.

TO REMOVE GASOLINE MARKS.

To take out the marks sometimes left after cleaning with gasoline lay over the place a piece of clean white blotting paper and press with a hot iron.

CORRECT.

During a recent examination in the theology of the Old Testament, the following question was asked a young clergyman: "What language did Balaam's ass speak?" After a moment of thought, a smile flashed across his face and he wrote his answer. I looked at the paper. He had written: "Assyrian."

PROOF.

We know that an act of charity is good because so many men brag about it when they've done one.—Detroit Free Press.

If you have an old hammock that is worn out, cut out the ragged body and use instead a double length of denim, or clean meal sacking. Stitch this to the hammock ends which are good, though the body is worn out, and you will have a hammock that will delight the children.

You lent a hand to a fallen one,
A lift in kindness given;
It saved a soul when help was none
And won a heart for heaven;
And so for the help you proffered there.
You'll reap a joy some time—somewhere.
—D. G. Bickers.

One of the best methods of ridding the house of flies is to put into an atomizer some oil of lavender slightly diluted with hot water. Spray it into the air and the flies will leave the place. This also leaves a delightfully fresh violet odor in the house.

Time is
Too Slow for those who Wait,
Too Swift for those who Fear,
Too Long for those who Grieve,
Too Short for those who Rejoice;
But for those who Love
Time is Eternity.
—Written for a Sun-dial by Henry Van Dyke.

When using celery, save the white leaves at the tips of stalks, dry thoroughly and keep in covered tin boxes. They are a delicious addition to soups, etc., giving the celery flavor when that vegetable is out of season.

You gave on the way a pleasant smile
And thought no more about it;
It cheered a life that was sad the while
That might have been wrecked without it;
And so for the smile and its fruitage fair
You'll reap a crown some time somewhere.
—D. B. Bickers.

A large laundry-bag made plainly of brown linen, or some other washable goods, ought to have a place in every closet, to receive shirtwaists or other soiled articles, as to allow them to lie on the closet floor or about the room, is decidedly untidy and a bad habit.

Keep me from caring more for books than for folks, for art than for life. Steady me to do my full stint of work as well as I can; and when that is done, stop me, pay what wages Thou wilt, and help me to say from a quiet heart, a grateful Amen.—Van Dyke.

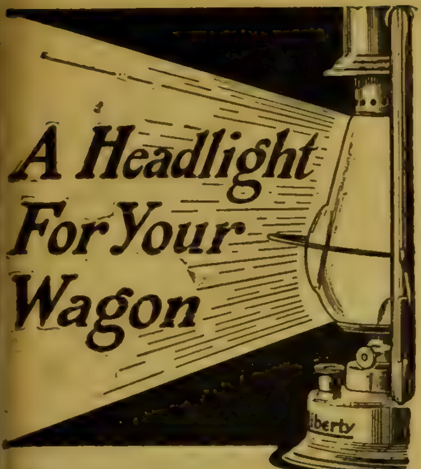
The man who will take the same interest in your business as his own is rare, even though you pay him good money for his trouble.

Be strong!
We are not here to play, to dream, to drift,
We have hard work to do, and loads to lift.
Shun not the struggle; face it. 'Tis God's gift.
—Maltbie D. Babcock.

Those who think this the best age of all ages to live in should not object to an increased cost for the privilege of living in it.

For I am one who lives to say
My skies have held more gold than gray
And that the glory of the real
By far outshines my youth's ideal.
—Ella Wheeler Wilcox.

First, buy good stuff, then take good care of it, and it will be good for a good long time.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Liberty

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Now is the time to sow **Pansy, Stock** and **Christmas Flowering Sweet Peas.**

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Theodore Payne
345 S. Main St., Los Angeles, Cal.

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San Jose Mayette and Concord still in the lead as the best well-tested commercial varieties that are blight-resisting. Every tree guaranteed grafted from original bearing stock, and all on California black walnut root. New catalogue ready.

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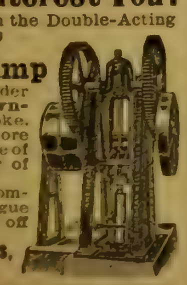

GOOD CLEANERS.

An excellent way to clean any brass article without injuring the polish is to dampen a cloth with ammonia, rub it over a piece of pumice soap, and then over the brass and polish with a soft, dry cloth.

The common Irish potato is valuable as a cleaner. Mud stains on woolen goods can often be removed by rubbing with a piece of raw potato and woolen goods that are not very soiled can be cleaned perfectly by washing through warm water in which some raw chopped potatoes have been soaked and a little ammonia should be added to the water for black or navy blue cottons.

There is nothing better for cleaning glass bottles than the potato cut in small pieces and put in the bottle with plenty of hot suds and allowed to stand over night; then a vigorous shaking and rinsing out will leave the bottle clean and bright.

There is nothing better for dry cleaning felt hats, jackets and all kinds of woolen goods than cornmeal wet with gasoline. If a woolen garment is soiled enough to be washed, there is nothing better for cleaning it than strong soap suds made by stirring enough pearline in warm, soft water to make a nice lather and this suds is good for delicate fabrics as well as heavy fabrics, such as men's pants and coats, and if the washing is carefully done and the rinsing thorough the goods will be clean and the colors brightened, and this suds is especially good for flannels worn by young children.

It is well to keep on hand a bottle of wood alcohol in which a little salt is dissolved, as this is excellent for removing grease spots from woolen garments, and the alcohol without the salt is fine for cleaning black silk. The best way to use it is to dip a small brush in the fluid and clean every inch of the fabric and then press on the wrong side with moderately hot irons, and no garment will look well unless it is carefully pressed.

To cleanse ribbons, wash them in suds of pure soap and water and dry. Lay them on a table or other smooth surface and smooth down with a wet sponge. They will stick to the table and when dry may be peeled off almost as smooth and fresh as new.

For removing spots from men's clothing, a small roll of rather heavy dark cloth tied or sewed together as tightly as possible will be found a great convenience. Dip one end into the preparation for cleaning, brush the garment gently with it and dry with the other end. This will be found better than a sponge or light cloth, as there will be no lint or bits as from a sponge.—Kansas Farmer.

GOOD WILL AND THE CHRISTMAS PRESENT.

A great deal of criticism is yearly poured out about the Christmas present. Some of it is deserved. The Christmas present that is a soulless exchange between reluctant acquaintances; the Christmas present that is the largest amount of worthless show for the smallest amount of value; the Christmas present that is beyond the giver's means or felt as an obligation by the receiver; the Christmas present that was somebody else's last year and is saved up and passed on; the Christmas present, in other words, that is machinery and pretence and not the living, real thing—this ought to be criticised out of existence. But the real Christmas present is a different thing, whose critics judge themselves.

The real Christmas present is a concrete bit of good-will and affection. The baby's first Christmas stocking—what family could argue calmly about doing away with it? The children's gift to mother, selected in conclave, and saved for enthusiastically—how much it means. The remembrances of friends, be they intimates of next door or divided by half the earth—what a fulness they give to the world-wide day! It is because of the sweetness of the Christmas gift that foolish people abuse it. They try to grasp too much, or to fill the empty place of the real gift with the simulacrum of it. Let each Christmas present be real—let that rule be held to—and all the joy is kept, and all the mistaken rush and overloading and nervous strain vanish. For real gifts are full of simplicity and love, and the spirit of Christmas is peace—peace and good-will.—Harper's Bazaar.

THE COUNTRY'S CHRISTMAS GIFTS.

There are some gifts this country needs, and that woman can put in its Christmas stocking. If she does not, America will go without them, day by day, throughout year after year, and suffer for the lack. One is the gift of pure food, in every home—pure food which never will be reached until the women of the United States insist upon its manufacture, its presence on the grocery shelves, its safeguarding by adequate law.

Another gift needed is that of the right of every American child to live, to be educated until its fourteenth year, to be protected against the forces of greed and of evil. Christianity means this or it means nothing; and yet babies all over the land die by the thousand, poisoned by stale milk or murdered by tenement conditions; and little children toil, dwarfed and exploited, in American mills and mines and sweatshops. Not until every woman helps to give every child its life and its rights in our land has she come into the true national spirit of Christmas.

A third is the gift of health. It rests with the women to create the home, the school, the municipal conditions of wholesome living in each community. Pure air in every room, clean surroundings, sanitary laws—these are no mystery beyond any woman's learning, or beyond the power of women's concerted action to gain inside and outside their homes. All men agree, all doctors repeat, that woman alone can confer this gift of public health in all its details and its fulness.

There are others. But just these three—if 1910 saw them given, what a Christmas Uncle Sam would have, and how he would rise up and call the givers blessed!—Harper's Bazaar.

FLOWERS.

A widow's "weeds" are flowers that tell
Her sad bereavement story,
But often they're so pretty that
We call them "mourning glory."
—Cleveland Leader.

ME, TOO.

"Don't move," she cried; "I've got a bite."
The man said with a sigh,
And poked his fishpole down his back;
"Confound it, so have I."

"Grant my request, dear Lord, I pray,
That every mistake I make today
May serve, like an angel's touch, to show
How on the morrow I ought to go."

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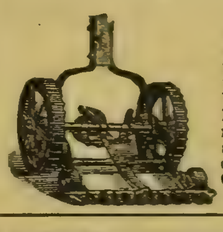

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Will cut tall grass and weeds and do all the trimming along the walks and drives. Your dealer should have them—if he has not drop us a line and we will send circulars and prices.
Clipper Lawn Mower Co
Dixon, Illinois.

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San Francisco and Los Angeles Produce Markets

Los Angeles Markets

LOS ANGELES, Dec. 7, 1910.

Butter.

Butter stands at the same figures, with a good demand, especially for second grades.

Prices to trade 2½c in advance of the following Produce Exchange quotations:

Extras	36½
Firsts	32½
Cooking	25

Cheese.

Local	18
Northern, fresh	18@18½
Oregon Daisy	18@18½
Imported Swiss	32
Domestic Swiss	21@24

Eggs and Poultry.

Decline in San Francisco egg market helps to keep prices in Los Angeles down to last week's quotations in spite of small receipts.

Paying price f. o. b. Los Angeles is:

Local ranch candled	46
Case count buying price	42
Eastern fresh	36
Eastern storage	34
Seconds	30

Dealers pay for live poultry f. o. b. Los Angeles:

Hens, per lb	15@18
Roosters	8@18
Fryers and roasters	21
Broilers	27
Turkeys	20@24
Ducks	17½
Geese	17
Squabs, per doz	1.50

Live Stock.

The following quotations are f. o. b. Los Angeles on all stock:

Hogs, 175 to 200 lbs	8
Prime steers	5
Heifers	4@4½
Calves, per lb	6½
Sheep, ewes, per head, shorn	5.00
Lambs, per head	3.75@4.25
Wethers, shorn	5.00

Potatoes.

Wholesale prices are:

Highlands	1.85
Salinas	2.00
Lompoc	2.00
Nevadas	1.85
White Rose local	1.50@1.75
Sweets, yellow, per ctl	2.25

Onions.

Wholesale quotations:

Australian Browns	1.75
Oregons	1.85
Garlic	8

Vegetables.

Wholesale quotations:

Artichokes, northern, doz	1.25
Beets, sack	90
Beans, Lima	6@7
Beans, green	6@7
Beans, wax	6@7
Brussels sprouts	10
Bell Peppers, lb	5@6
Green chilis	4@5
Cucumber, per box	1.00
Cabbage, per sack	70@75
Celery, crate	2.50
Cauliflower, crate	1.50
Carrots, per sack	90
Corn, box	50@65
Egg plant, per lb	5@6
Horseradish	12½
Onions, green, per doz. bunches	25
Leeks, per doz	40
Lettuce, common, crate	60@75
Oyster plant, doz	40
Okra, lb	10
Peas, lb	7
Parsley, doz bunches	20@30
Parsnips, doz. bunches	40
Pumpkins, lb	1@2
Radishes, doz. bunches	20@25
Rhubarb, Crimson Winter, lb	6
Spearmint, doz. bunches	30@35
Spinach, doz	20
Hubbard squash, lb	2
Summer squash	75
Tomatoes, lug	75@85
Turnips, sack	90

Citrus Fruits.

Navels	2.25@2.50
Grapefruit	2.50@3.50
Lemons	3.00@3.50
Tangerines	1.75

Fresh Fruits.

Wholesale prices on the market are:

Alligator pears	4.00@5.00
Apples, Belleflower	1.00@1.25
Spitzenbergs	1.75@2.50
Jonathans	2.25@2.50
Greenings	1.10@1.25
Pearmains	1.10@1.25
Pippins	1.20@1.35
Pineapples	7½@8½
Casabas, doz	2.00@2.25
Figs, box	1.00
Grapes, lug	1.25@1.50
Tokays	1.25@1.50
Mangoes, lb	10@15
Persimmons, lb	5@7
Pomegranates, lug	1.00
Guavas, basket	5@6
Pears, lb	5
Bartletts	2.50
Strawberries	10@14
Blackberries	8@10
Raspberries	8@9
Watermelons, lb	2@2½
Christmas melons	2.25@2.50

Dried Fruits.

Wholesale prices are:

Apricots	12
Evap. apples, fy., per lb	8½@9
Figs, box	1.65
Peaches	6¾@8½
Nectarines	9@10
Pears	10@12
Prunes	6½@10
Plums	10

Beans, Dried.

Wholesale quotations:

Limas	5.00@5.25
Black eyes	5.50
Pinks	6.00
Lady Washington	4.25
Small white	4.00@4.25
Garvanzas	4.50
Lentils	7.00

Nuts.

Wholesale quotations are:

No. 1 soft shell walnuts	16@18
No. 1 hard shell walnuts	14
No. 2, all kinds	11

Grafted or budded, an advance of 2½c.

Chestnuts	12
Filberts	15
Almonds, IXL, lb., new	16@17
Pecans, polished	15@16
Peanuts, Eastern	7@7½
Peanuts, California	6

Honey.

Wholesale quotations:

Extracted water white	9½
Extracted light amber	8
Comb water white	18@19
Light amber	15
Beeswax	30

Hay.

Buying prices f. o. b. cars Los Angeles are:

Barley hay	13.00@14.00
Wheat hay	14.00@15.00
Tame oat	14.00@15.00
Alfalfa	12.00@13.00

Grain.

Wholesale selling price f. o. b. Los Angeles:

Wheat, new, ctl	1.75@1.85
Corn	1.60
Popcorn	3.50@4.00
Egyptian corn	1.75
White oats	1.80
Rye seed	2.00
Seed barley	1.20

Feed Stuff.

Wholesale selling price f. o. b. Los Angeles:

Alfalfa meal	1.10
Cracked corn	1.65
Cracked wheat	1.90
Shorts	1.80
Bran	1.55
Oil cake meal	2.50
Feed Meal	1.70
Rolled barley	1.20

San Francisco Markets

SAN FRANCISCO, Dec. 6, 1910.

Butter.

Butter has declined on extras and firsts. Demand holds good.

California extras, lb	35½
California firsts	33
California seconds	30
Storage	31

Cheese.

California flats, new	13@16½
Cal. Young America, fy., new	16½@17
Oregon, fancy	16½

Eggs and Poultry.

Eggs have been steadily dropping in price since last week, extras now bringing only 42½c.

Official quotations of the San Francisco Wholesale Dairy and Produce Exchange are:

Fresh ranch extras	42½
Firsts	41½
Seconds	33
Storage	32
Hens, doz	4.00@10.00
Fryers, doz	5.00@5.50
Ducks	6.00@10.00
Broilers	2.00@3.50
Roosters, doz	4.50@8.00
Turkeys	20@22
Geese	2.00@3.00
Pigeons	1.50@2.25
Squabs	3.00@4.00

Live Stock.

San Francisco prices, gross weight:

Steers	4¼@5¾
Cows and heifers	3½@4¾
Calves, lb	4½@6¼
Hogs	5@8
Milk lambs, unshorn	6@6¼
Wethers, No. 1	4¾@5
Ewes, No. 1	4½

Potatoes.

Wholesale market quotations:

River White, cwt	1.30@1.40
Salinas Burbanks, cwt	1.70@1.85
Oregon Burbanks, cwt	1.50@1.65
Sweets, ctl	2.60@2.75

Vegetables.

Wholesale quotations:

Artichokes	25@40
Beans, string, lb	8@10
Cucumbers, hothouse, box	2.00@2.25
Celery, crate	1.50@1.75
Chili peppers, lug	25@40
Green corn, sack	75@1.25
Egg Plant, lb	5
Okra, box	40@60
Peas, lb	5@7
Summer squash, box	1.00@1.25
Rhubarb, box	1.00@1.50
Tomatoes	25@1.25
Garlic, lb	2½@3

Onions.

Onions, California, sack	1.00@1.15

Citrus Fruits.

Navels, new	1.50@3.50
Grapefruit	1.50@3.00
Lemons	1.50@4.00
Limes	3.00@5.00
Tangerines	75@1.75

Fresh Fruits.

Apples, box	50@85
Apples, Belleflowers	90@1.00
Newtowns	75@1.25
Bananas, Hawaiian	1.00@1.50
Figs, box, single	50@1.00
Grapes, Isabellas	90@1.15
Huckleberries, lb	7@10
Pears, Bartletts	1.50@2.00
Winter varieties	60@1.00
Persimmons, box	50@75
Pineapples, Hawaiian	2.00@3.50
Pomegranates	50@1.50
Strawberries, chst	4.00@7.00

Dried Fruits.

Market is quiet, and general tone not at all strong.

1910 crop, f. o. b., carload lots, per lb.: Apples, 8@9c; apricots, 10½@13c; do Moorparks, 14c; peaches, 5¼@7c, with a premium of ⅛@¼c on Muirs; prunes, Santa Claras, 5½@6c, with ½c premium on 60s to 90s; outsides, 5⅜@6c; figs, 4¾@6½c for white, and 4¼@4½c for black; pears, 9¾@13c.

RAISINS—1910 crop: London layers, in 20-lb. boxes — 6-crown clusters, $2.50; do 5-crown, $1.75@2.00; do 4 crown, $1.40@1.50; 3-crown layers, $1.25@1.30; do, 2-crown, $1.15@1.20. Seeded, per pkg.—Fancy, No. 16, 4¾@5c; choice, No. 16, 4¾c. Loose Muscatels, in 50-lb. boxes—Standard, 4-crown, 4¼@4½c; do 3-crown, 3¾@4c; do 2-crown, 3¼@4½c. Dried grapes, 3c. Seedless—Muscatels, 3¼@3½c; Sultanas, 4c; Thompsons, 4½c.

Nuts.

Walnuts, No. 1 soft shell	15
Walnuts, No. 1 hard shell	14½
Almonds, '10 N P U	13
Almonds, '10 Nonp	15
Almonds, '10 I X L	14
Almonds, Peerless	12
Pecans	14@17
Chestnuts, California	6@8

Beans, Dried.

Limas	4.70
Pink	5.50
Black eyes	5.50@5.65
Small white	3.50@3.65
Large white	3.50@3.60
Kidneys	5.65
Garvanzas	3.25
Bayo	5.25
Horse beans	2.00
Red Mexicans	5.50
Cranberry	4.50@4.75

Hops.

Hops, coast, 1910	11@14
Hops, Oregon	11@14
Hops, 1909	8@11

Honey.

Water white comb, '10	15
Dark comb	12½
Extracted white	8
Extracted dark	6½
Beeswax, lb	24@30

Hay.

Scott, Magner & Miller say:

Arrivals of hay for the week have only been about 1500 tons, which is a remarkably small amount for us to receive compared to the large amounts that have been coming in here steadily for some time back.

There does not appear to be any life to the business lately. Consumers have been expecting to buy their hay at summer prices, and as the holders of hay in the country have been asking higher prices than in the summer time, trade has been retarded, and it has been difficult to handle anything here with any satisfaction.

Fancy hay commands our top quotations, but there has been so little of this kind offered recently in this market that the prices for such hay have cut no figure in the general market. The medium grades of hay are dull, and slow to move, and a thorough quietness pervades the entire market, and anything that may develop that can change this unsatisfactory condition will be very much welcomed by all parties concerned.

The shipping trade has continued quiet. There has been some inquiry from the Puget Sound district for grain hay, and it was thought that we could obtain an outlet in that section for considerable hay in competition with the Canadian product, but apparently our present prices will not permit of our entering their markets at this time.

Fancy wheat	12.50@13.50
No. 1 wheat or wh and oat	10.50@11.50
No. 2 wheat or wh and oat	9.00@10.00
Choice tame oat	10.50@11.50
Other tame oat	8.00@9.50
Wild oat	8.00@9.00
Stock hay	5.50@6.50
Alfalfa, ton	9.00@11.00
Straw	40@50

Grain.

Wheat, No. 1	1.42½@1.50
Barley, fancy	1.05@1.06¼
Barley, good to choice	1.02½@1.03¾
Barley, poor to fair	95@1.00
Oats, white	1.45@1.55
Rye, new crop	1.47½@1.52½
Alfalfa seed	18@20
Mustard, brown	4½
Millet	2¾
Flaxseed	5@5½
Broom corn seed, ton	23.50

Feed Stuff.

Bran, ton	30.00@32.00
Feed cornmeal, ton	35.00@36.00
Cracked corn	35.00@36.00
Ground barley, ton	21.50@23.50
Rolled oats, ton	29.00@31.00

Middlings	34.00@36.50
Oil cake, ton	40.00@41.50
Cocoanut cake, ton	25.00
Mixed feed, ton	25.00@27.00
Shorts	31.00@32.50

Deciduous Market

SACRAMENTO, Dec. 3, 1910.

The following circular of the California Fruit Distributors gives number of cars of deciduous fruit shipped from all points in California for the week (7 days) ending Friday morning, December 2nd, 1910:

Grapes: 15 cars.

There were no shipments made on the 29th of November and on the 1st and 2nd of December. It is likely that there will be no further shipments and we may consider that the season is now closed. As there is considerable interest in the shipments made from California for the season the following is appended showing the number of cars of each variety leaving the state in 1910:

Cherries, 250 cars; apricots, 290 cars; peaches, 2518 cars; plums, 1552 cars; pears, 2361 cars; grapes, 4930 cars; apples, 2104 cars; miscellaneous, 17 cars. Total 14,022 cars.

Citrus Market

LOS ANGELES, Dec. 7, 1910.

Navels are proving sweeter and rather better colored than last year this date. This is resulting in keener demand and while no record prices are made yet, the average is excellent. Were it not for the rain which has stopped all work in both Butte and Tulare counties those sections would be practically cleaned up.

With favorable weather conditions the present promise of one of the finest quality crops ever will be made good. Sizes are running excellent.

Lemons are rather slow and the present cut is now going into storage for spring delivery. The quality is superb and with frost protection in most orchards the quality cut will continue till spring.

Shipments.

Shipments of oranges since November 1, 1910, 733 cars; lemons, 499 cars; total, 1,232 cars. To same date last season: Oranges, 285 cars; lemons, 303 cars; total, 588 cars.

NEW YORK, Friday, Dec. 2.—Four cars Navels, 1 car Valencia and 2 cars lemons sold. Prices lower on oranges, easier on lemons. Weather fair, cold.

NAVELS—	Avge.
Mt. Whitney TC Ex Porterville	$3.10
Blue Label CC Ex	2.40
Sentinel CC Ex	2.35
VALENCIAS—	Avge.
Trail Sierra Mad. Lam. C. Assn	$2.80
LEMONS—	Avge.
Pet	$3.30
Greyhound SA Ex	2.65
Moose	2.85
Pronghorn OK Ex	2.40

PHILADELPHIA, Friday, Dec. 2.—One car Navels and 1 car lemons sold.

LEMONS—	Avge.
Quail OK Ex	$3.60
NAVELS—	Avge.
Mariposa Fy Earl Ft Co	$2.40

8 cars Floridas sold. Oranges $1.30 to $3.15; average $2.10. Grapefruit $1.50 to $2.50; average $2.25. Market firm on good stock.

ST. LOUIS, Friday, Dec. 2.—One car Navels and 1 car lemons sold. Market advancing on Navels. Cold.

NAVELS—	Avge.
Tulip TC Ex. Porterville	$2.50
LEMONS—	Avge.
Tulip TC Ex. Porterville	$3.00
Economy CH Randolph Ft Co	3.05
Windermere CH Randolph	3.15

PITTSBURG, Friday, Dec. 2.—One car sold. Market lower on lemons. Cold. Snowing.

LEMONS—	Avge.
Quail OK Ex	$3.15
Blue Jay OK Ex	2.55
Coyote OK Ex	2.90

BOSTON, Friday, Dec. 2.—Three cars sold. Market unchanged. Weather clear and cool.

NAVELS—	Avge.
Forgetmenot TC Ex Porterville	$2.15
Mariposa Fy Earl Ft Co	3.35
Sentinel CC Ex Lindsay	2.05

CLEVELAND, Friday, Dec. 2.—One car Navels and 2 cars lemons sold. Market lower on lemons. Cold, snowing.

LEMONS—	Avge.
Pet SA Ex	$3.15
Cabon Sierra Mad Lam C A	2.60
Trail Sierra Mad Lam C A	2.90
Our Beauty SD Mad Lam C A	2.20
NAVELS—	Avge.
Sunny Slope, fy, Rand Ft Co	$2.85

CINCINNATI, Friday, Dec. 2.—Cold. Snowing. Market declining on lemons; weak on oranges. Two cars lemons sold. Seven cars Floridas.

LEMONS—	Avge.
Pet SA Ex	$4.00
Loma Ch Limoñiera C	3.50
Bridalveil or Limoneira	3.70
White Cross or Limoneira	3.30

CHICAGO, Friday, Dec. 2.—Lemons—An easy market is quoted, with the supply good. Boxes, California fancy 300s, 360s, $3.75; extra choice, 25@50c per box discount.

Oranges—A fair demand reported for California Navels. Buyers prefer the seedless kind. All other oranges rule slow and easy. Taken all together, the supply is good. Boxes, Navels, California, 96s, $2.25@2.50; 126s, $2.50 @2.75; smaller sizes, $2.75@3.25.

NEW YORK, Monday, Dec. 5.—Ten cars navels, one car Valencias, one car Arizona oranges and three cars of lemons were sold. The market was strong on good navels, easier on poor stock, and easier on lemons. The weather was cloudy.

NAVELS—	Avge.
Mariposa Fy Earl Ft Co	$2.15
Royal Crest Fy Stewart Ft Co	2.40
Winterhaven Fy & CH Stewart Co.	2.25
Heart	2.70
Clown Fy Sparr Ft Co	2.55
Circus XC Sparr Ft Co	2.25
Pioneer Spl Pioneer Ft Co Imp	2.35
Hetch Hetchy IMP	2.00
Watchuma T C C Ex	2.75
Lemon Cove T C C Ex	1.85
Forgetmenot TS Ex	2.00
Sentinel T C C Ex	2.05
ARIZONAS (Halves.	
Desert	2.60
Cactus	2.10
ARIZONAS (Boxes).	
Desert	4.75
VALENCIAS—	
Old Mission Fy C C Chapman	9.05
Golden Eagle Sd C C Chapman	4.95

LEMONS—Whittier ST Ex, $3.05; Rey, $3.10; Tunnel, $2.80; Watchuma, $3.15; Lemon Cove, $2.55.

CHICAGO, Monday, Dec. 5.—Lemons—Owing to slow trade and fairly good offerings, the market is easy. Boxes, California fancy, 300s, 360s, $3.75; extra choice, 25@50c per box discount.

Oranges—Californias sell fairly, but other kinds are slow. The supply was good. An easy feeling exists. Boxes, navels, California 96s, $2.25@2.50; 126s, $2.50@2.75; smaller sizes, $2.75 @3.25.

CLEVELAND, Monday, Dec. 5.—Two cars navels and one car lemons sold. Prices low on navels account quality, unchanged on lemons. Cool and cloudy.

NAVELS—	Avge.
Blue Label CC Ex Lindsay	$2.15
Strathmore TC Ex Strathmore	2.40
Red Label CC Ex Lindsay	2.00
El Mirador TC Ex Strath	2.10
LEMONS—	
Trail ACG Azusa	3.10
Our Beauty ACG Ex Azusa	2.65
Canyon ACG Ex Azusa	2.80

PHILADELPHIA, Monday, Dec. 5.—Five cars navels and two cars lemons sold.

NAVELS—	Avge.
Blue Label CC Ex Lindsay	$2.20
Pioneer Fy Pioneer Ft Co	2.30
Birchbark Fy	2.45
LEMONS—	
Excellent SP Ex Santa Paula	3.20
Euclid Or Growers Ft Co	3.65
Sunside SP Ex S Paula	3.05
Flower Sd Ely Gilmore	3.30

Twenty cars Floridas sold. Oranges $1.20 to $5.70; average $2.10; grapefruit, $1.75 to $4.70; average $3.00; tangerines, $1.55 to $2.65; average $2.00. Market advancing on good stock.

ST. LOUIS, Monday, Dec. 5.—Two cars lemons sold. Market steady on navels, weaker on lemons. Snowing.

NAVELS—	Avge.
Hiawatha TC Ex Zanta	$2.50
Full Value TC Ex Zanta	2.45
LEMONS—	
Las Fuentes CS Summerland	3.05
Sapphire	2.10
El Toro	1.90
Montecito CS Summerland	2.60
Topaz	1.95

PITTSBURG, Monday, Dec. 5.—Six cars sold. Market firm on navels, lower on lemons. Cold, snowing.

NAVELS—	Avge.
Forgetmenot TC Ex P'ville	$2.20
Orchard Or Nat Og Co	2.40
Hetch Hetchy	2.65
Tulip TC Ex P'ville	2.25
Del Monte	2.05
Pride of West Pioneer Ft	2.55
LEMONS—	
Pet SA Ex	2.85
Crack Shot Or Sparr Ft Co	2.75
Lotengo Fy Sparr Ft Co	3.05

BOSTON, Monday, Dec. 5.—Sixty-six cars sold. Clear and cold. Market unchanged on oranges, doing better on lemons.

NAVELS—	Avge.
Forgetmenot TS Ex	$3.00
Pioneer Spl Pioneer Ft Co	2.25
Lily	2.35
Pride of West	2.00
LEMONS—	
Rey ST Ex Fernando	3.25
Watchuma CC Lemon Cove	3.25
Bluebell Fy Randolph Ft Co	3.15
Tunnel ST Ex Fernando	3.00
Lemon Cove CC Ex L Cove	2.85

CINCINNATI, Monday, Dec. 5.—Cold. Market declining on lemons, steady on oranges. One car lemons sold. Also five cars Floridas.

LEMONS—	Avge.
Horseshoe SW Bonita	$3.55
Monticello SW Bonita	2.60

Floridas, BRIGHTS, $1.75 to $2.40; RUSSETS, $1.70 to $2.30.

BUSINESS FAILURES.

Commercial statistics indicate that business is a great hazard. Failure is inevitable for the average business man whether he is engaged commercially or in manufacturing.

Bankruptcy, said a director of the Union Bank of Boston, is like death and almost as certain.

The cause of the whole trouble is due to the unsound and unwise principles which prevail, the anarchy which reigns over our business affairs, suicidal competition, ruinous prices, dishonesty, the manufacture of "cheap and nasty" goods, etc.

But there are exceptions to the almost inevitable rule of failure. One of these exceptions, a remarkable one, is The Temple Pump Co., of Chicago, Ill. They are now entering their 59th year of continuous manufacturing. They manufacture Gasoline Engines, Windmills, Pumps, Tanks, etc. Fifty-nine years of continuance can be no other than the outcome of reliability in their output and conscience in their dealing with their customers.

SPECIALIZING.

Mr. J. B. Wagner of Pasadena, who is well known to Cultivator readers as a breeder and producer of plants, especially of improved strains of Crimson Winter Rhubarb, has also propagated and dealt largely in fruit trees and ornamental plants. He has now disposed of his general nursery stock to D. W. Coolidge, nurseryman, also of Pasadena. This will enable Mr. Wagner to devote his entire time to the propagation and improvement of rhubarb, berries and small fruits. In addition, he will give much time to developing the giant black walnut timber tree. Photographs of this walnut have been shown in the Cultivator, exhibiting a wonderful growth. Mr. Wagner is strong in the belief that it has a great future. Spineless cactus, asparagus and horseradish will also receive some of Mr. Wagner's attention. Mr. Wagner is issuing three booklets, one on rhubarb, one on berries, and another devoted especially to his black walnut, which make interesting reading. They will be forwarded on request. Mr. Wagner's address is Pasadena.

INTENSIVE FARMING.

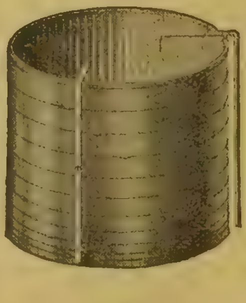
In a seed store in Topeka some time ago, I saw a man call for some alfalfa seed. The dealer told him that his best alfalfa seed was worth so much per bushel. The buyer objected to the price and asked if he had not a cheaper seed on hand. He was told that he had but would not give it the same recommendation. The inferior seed was bought and sowed, and when the crop came the difference was shown. Not only had it required more seed to cover the land and secure a stand which made the first cost fully as high as it would have been with the high priced seed, but he found that he had also sowed a number of different weeds and other plants which he did not want in his alfalfa. He is now convinced that the high priced seed would have been a great deal cheaper for him to buy.

Intensive farming not only includes the selection of good seed, but it includes the proper handling and cultivation of the soil as well. Good seed is of itself an important item in successful farming, but this must be backed by good soil preparation and good cultivation. Another important point is to be found in connection with the raising of live stock. In the last year or so, within several states of the corn belt, there has been a wide-spread tendency to quit live stock farming, because the high prices of feed have made grain farming more profitable for a brief period. This has proved to be a mistake as no successful system of continuous agriculture has yet been devised which does not include live stock as an important factor. Intelligent live stock farming is and always has been more profitable than grain farming. It not only brings greater immediate results, but it is vitally important in the conservation of the resources of the farm. Exclusive grain farming is not likely to be generally adopted as a permanent thing until we can ourselves eat corn and hay. Every crop that is of value, as well as every weed crop that is developed on the farm takes from the soil a certain amount of food elements which must be returned or which will leave the farm poorer than it was before. The grain farmer sells his farm with each load of grain that he markets. The live stock farmer retains the original capital in his farm and each year turns off a profit in the way of crops. The well conducted stock farm maintains its quality or increases in value as the years go by.

Intensive farming is not a bug-bear. It is not something big that we should strive after without very definite ideas of attainment. It is simply common sense applied to our everyday work. Use the best seed. the best methods of preparation and cultivation of the ground, breed and feed good live stock, and turn every ounce of manure back to the land, and we shall have solved the question of intensive rather than extensive farming.—Kansas Farmer.

ILLUSTRATED PRICE CATALOGUE.

Many of our subscribers have seen "California Horticulture or The Fruit Grower's Guide," issued by the Fancher Creek Nurseries. This is a large, fully illustrated and beautiful book of 120 pages and is mailed by the Fancher Creek Nurseries, of which George C. Roeding is proprietor, for 25 cents. But for those who may wish a more concise guide of the productions of the nurseries, Mr. Roeding sends out annually his price list. which this year reaches the dignity of "An Illustrated Price List." It is full of illustrations and concise descriptions with prices of all plants and trees handled by the nursery. Fruit trees, vines. and ornamentals are fully described. It is well worth the asking, and to the prospective purchaser of nursery stock we doubt not it will be sent.



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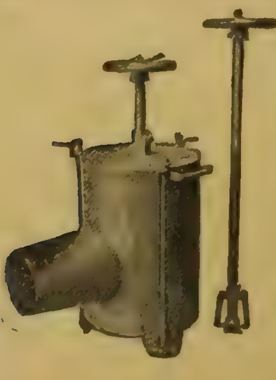

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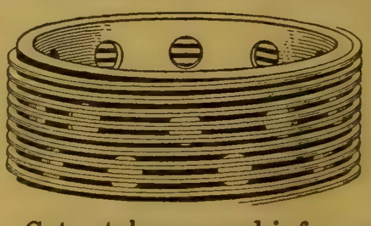

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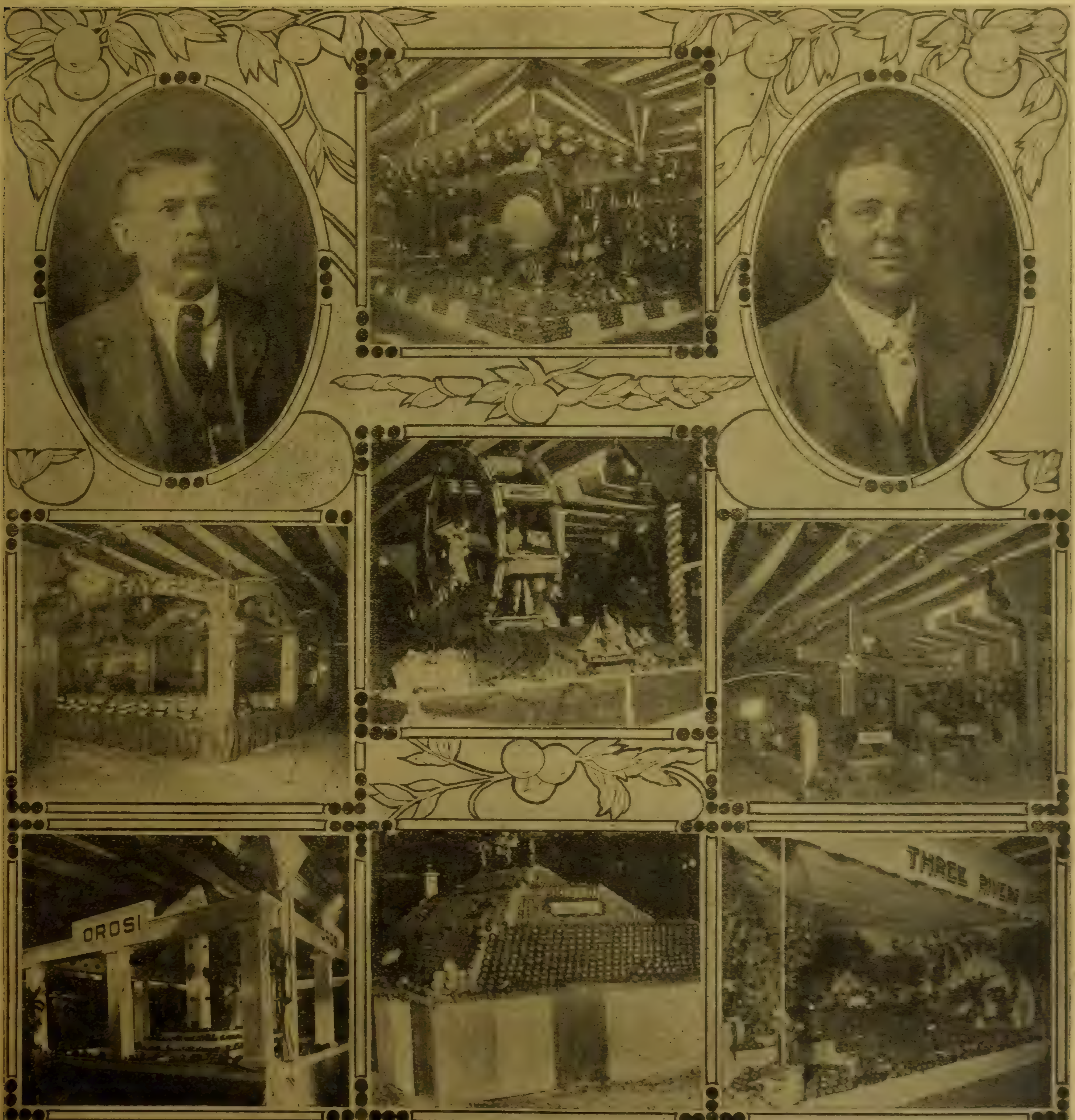

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We have still a fair stock of all leading pickling and oil sorts to offer, BUT THEY ARE GOING FAST, SO DON'T DELAY PLACING YOUR ORDERS.

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We are prepared to figure on carload lots and lesser quantities, on the following varieties:

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Write at once regarding your requirements, so you can order early and get the best.

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The leading shipping and table sorts are in strong demand. Also raisin grapes, Muscat, Sultana and Thompson Seedless. We list only the best and quote at reasonable prices.

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Are you aware that this new prune which is, without exception, the finest fruit of its kind ever introduced, is being offered by us for the first time this season? We can endorse it highly as an enormous and never-failing bearer, strong, healthy grower and best combination drying and shipping prune ever offered. The fruits average very large in size, are very sweet and perfect freestones.

The Formosa Plum

Far exceeds all other Japanese plums in its rare qualities as a shipping fruit. A grand fruit of largest size, heart-shaped and light cherry-red in color. The trees are very magnificent upright growers and abundant producers. This variety will appeal to every shipper of high grade fancy fruits, and we would urge you to include it in your collection.

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From any persons desiring information about varieties to plant. Our book entitled "California Horticulture" is of great assistance to all fruit growers, not only containing detailed descriptions but instructions for planting, care of stock, pruning, etc. The price is 25c, but to all persons who will send us a probable list of their wants for prices we will send this book FREE, also our NEW ILLUSTRATED PRICE CATALOG—something novel. Be sure to mention this ad when writing.

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California Cultivator

Vol. XXXV—No. 24 Los Angeles, California, Thursday, December 15, 1910 Subscription $1 a Year

Annual State Fruit Growers Convention at Stockton

The Convention Declares for More Liberal Appropriation for State Commission of Horticulture.—Standardization Encouraged.—Warning Against Mediterranean Fruit Fly.—Legislation urged which will give More Quarantine Powers

"It's a burning shame that the horticultural interests of California, practically a $150,000,000 industry, should be sidetracked with a measly appropriation of $12,500 while the state game and fish commission, which has to do with preservation of sport, has its great fund which requires six figures to express. The importance of the industry is such that we should all work for a greater appropriation by our legislature."

The above is the substance of a remark by Geo. C. Roeding of Fresno at the State Fruit Growers' convention at Stockton last week. He was indignant, even "hot" and that is "different," for Roeding seldom loses his temper. But it really was interesting for the madder he gets the better natured he looks. His remarks counted, however, for the hearty applause showed that the convention was with him in the demand that the greatest industry of California should receive more recognition at the hands of the coming legislature.

As Mr. Roeding said this work of the Fish and Game commission is worthy, for many find sport and recreation through the protection and increase of game and fish. But to place a sum almost fabulous in the hands of that commission while the horticultural interests which are vital to our welfare, receive a few thousand, is not the greatest manifestation of wisdom.

Geo. Compere read a paper on the subject of fruit flies and the warning which he gave as to the menace of the Mediterranean fly which is now in Hawaii was made plain to the delegates. The principal danger at present lies in the fruit that passengers from Hawaii may bring into ports of California without examination of baggage. Naturally such passengers will bring much fruit and unless they voluntarily give it up to inspectors of the horticultural commission they may carry to any fruit growing section of the state infected fruit which may release the most dreaded and absolutely uncontrollable pest known to fruit growers of the world. The enlargement of the powers of the commission and the granting of an appropriation which will enable it to enforce proper regulations are factors with which the coming legislature will have to deal.

Standardization.

The above was only a side issue in the Thirty-eighth Convention of State Fruit Growers. The greatest interest and much of the time of the convention was absorbed by standardization—grading or "honestization"—of the California fruit pack. One entire day was given over to its discussion. Green fruit only was touched upon. The work in Placer, El Dorado, San Joaquin, Sacramento, Sonoma, Shasta and Tehama counties was reported and in every case satisfaction expressed of the first season's results. Some growers are refusing to join, also a few shippers, but the more satisfactory returns which the guarantee labels on the standardized fruit brought on the average will doubtless cause more general observation of the practice another year. The Shasta-Tehama Fruit association showed an especially attractive color lithograph label with "Shasta Quality" trade mark, and "Standardized Fruit, grown in Shasta and Tehama counties, California," and of course Old Shasta, snow-clad, in the background.

The Almond Growers.

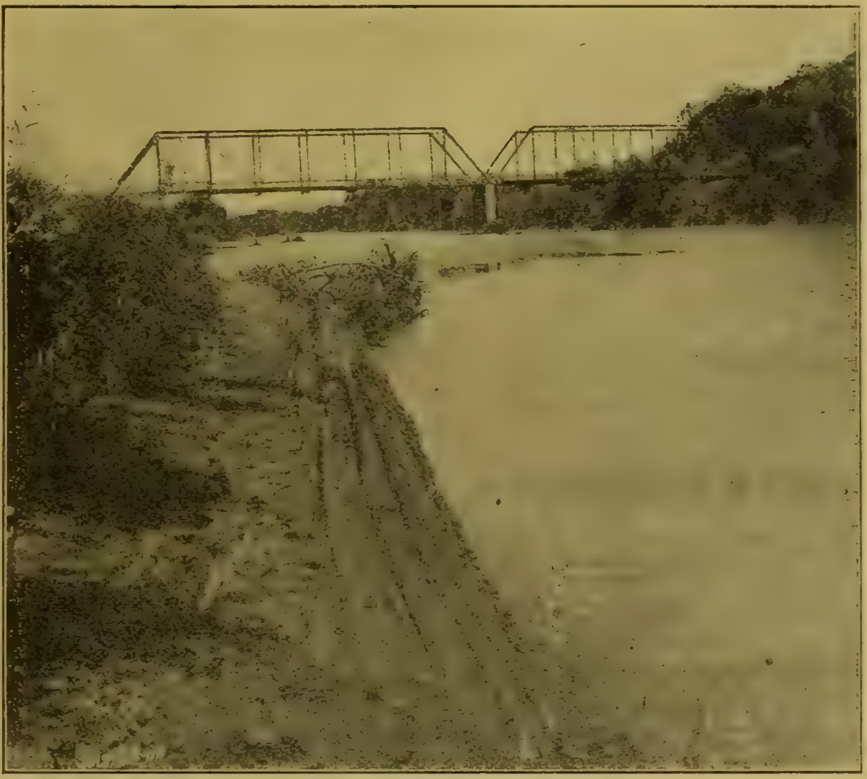
J. P. Dargitz, manager of the California Almond Growers' Exchange reported progress on the part of that organization in its first year. All the stock of the members has not yet been sold, but every promise is that the returns will be satisfactory. The regrettable part of this co-operative movement is that the expense of its support falls on the members while the benefits are almost as great to the outsider who takes advantage of the studying of the market by the co-operators. About 500 tons of nuts are yet to go.

Freight Rates.

Of course, Russ Stephens of Sacramento presented his report; rather the report of the committee on freight rates. This committee consists of R. D. Stephens, Sacramento; M. E. Anjier, Lodi, and C. M. Hartley of Placerville. This committee is the one standing committee of the convention and has been hammering away on freight rates for years. The specific demand is that the dollar postage stamp rate, formerly granted to lemons, shall be granted to green deciduous fruits.

The worst fight ever put up against this committee was at the San Jose convention a few years ago. Employes of the railways appeared at that convention and their efforts, supplemented by the work of many fruit-growers who felt that the committee was too aggressive, nearly got the best of the committee. Stephens is persistent, however, and at the Watsonville convention last year the following resolution was passed:

"Resolved, That the able and exhaustive report of our committee on freight rates shows valuable data and a vast amount of labor performed, and we hereby endorse that portion of their claim for a reduction of a freight rate bringing deciduous fruits on a par with the orange rate. We justify their demand for a postage stamp rate of $1.15 per hundred pounds, but later experiences and computations, with present labor conditions, show us that a rate of $1.15 for the past season would have been too high to encourage any further development in the fruit industry. Therefore, we hereby instruct our committee on freight rates to press the matter through all legitimate channels for a postage stamp rate of $1.00, thus placing all deciduous fruit growers on a par with the lemon and apple growers of the coast. This rate will satisfy the fruit interests and offer encouragement to present and prospective growers."



Courtesy San Joaquin County C. of C.

SCENE ON MOKELUMNE RIVER, S AN JOAQUIN COUNTY.

This year's convention also endorsed the effort of the committee, also took steps to have the matter brought before the Interstate Commerce commission in the hope that that body might force the issue and secure justice from transportation companies. The committee has formerly believed in securing the concession from the railways direct but that hope is now given up entirely,

Annual Address.

The commissioner's address was not long and more largely devoted to Standardization, yet many other points were touched. On the matter of standardizing or putting up a more honest pack Mr. Jeffery said, in part:

"California is under special moral obligations to send an honest and uniform fruit pack. All will admit that it pays to do so, but in our case both moral obligation and self-interest join in the new plan of improving the fruit pack, and I cannot see why, under these circumstances, it should be necessary to agitate a matter so conclusively established. But it is necessary, for out of over three dozen meetings held in deciduous fruit counties only five of these counties adopted standardization.

"As we approach the relationship of standardization to overproduction, I think the subject deserves a side remark upon competition in the fruit business—justified also by purposes of this convention, for we are not here to consider solely the methods whereby we can grow more and better fruits. Cultural matters in horticulture have been given relatively too much attention—relatively, I say, because it follows inevitably that the elimination of dishonest and destructive competition in the production of fruits by raising the standards will do more for better horticulture than all other influences combined. Our subject here 'swallows itself and winks with great agility,' like Barnum's famous snake, for how can we advance standardization and legitimately curtail the output of unfit fruit against the products of ignorant and inefficient horticulture that are flooding the markets and have their origin so largely in the orchards that are planted merely to sell otherwise unsalable land? This is what I mean by unfair competition in the fruit business.

"It is useless to preach, unless one lives up to his pronouncements. And this is just what hundreds of growers are attempting to do in standardizing their fruits. And it is in line with one of the chief policies of the office which I represent. Those progressive growers have not ceased to educate themselves toward the practice of better cultural methods. But they have gone further and have tried to substantially protect the results of bet-

(Continued on Page 602.)

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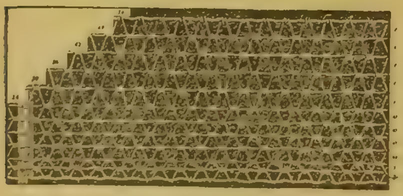

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INSPECTION OF NURSERIES

An Address Appealing for More Uniform Horticultural Laws, by George C. Roeding of Fresno. Before the California State Fruit Growers Convention at Stockton Dec. 6.

At a meeting last June of the horticultural commissioners and delegated fruit growers from each county of the state, you were given a new title by Mr. Stabler, who insisted in a discussion which arose at this meeting that you were policemen, minions of the law, so to say.

Yes, in a sense you are policemen doing your duty, enforcing the law, but in connection with your work, can there be any harm in making a claim for you that you are educators as well, not in the sense that you must beg the fruit grower and the nurseryman to comply with the law, but that it is to their interest as well as the state at large, to follow your advice and instructions so that the greatest industry in California,—and in my opinion it always will be—is protected by an organization of men so thoroughly trained, so keen to do good, so well educated not only as practical entomologists and horticulturists, that your firm attitude in enforcing the laws for the protection of our great fruit interests worth fully one hundred and fifty millions a year, will be so much appreciated by the fruit-growers that they will be quick to respond to your suggestions, not because you are policemen, but because you are educators along lines which must find a responsive chord not only in the heart but the pocket strings of every fruit grower.

To the man who will not take care of his property, and who never will unless he is forced to do it, may you always be policemen and determined ones at that, but to the intelligent fruit grower and nurseryman, may you be harbingers of good, showing him by your counsel and advice how it is best to take care of his interests. It is only by unity of action that this great industry of ours is going to be maintained at the standard it deserves. I want to see the time when the animosity which seems to exist between the nurserymen and horticultural commissioners is obliterated so that the two may combine to build up the great fruit interests of this state.

To illustrate how bitter the nurserymen are in many parts of the United States in their denunciation of the horticultural laws, I want to quote from an address of Mr. E. W. Kirkpatrick of McKinney, Texas, made at the American Association of Nurserymen at Denver, Colo., last June.

"Nurserymen, agriculturists and horticulturists are patriotic and loyal to the government; they recognize the fact that they are a part of it, and cheerfully contribute to its maintenance not only in the payment of their money in the form of taxes, etc., but if need be in the sacrifice of their property or their lives. It is our wish to build up and strengthen it and perpetuate it. It is not our purpose to tear down and destroy. All we want is a square deal. It is said that there is a specific germ from which all these insect diseases that have been enumerated spring. Some of the doctors say not, and when doctors disagree what shall the amateur do? In our state, an inspector notified us that our orchard needed inspection, and we invited him to visit us. We have to pay the expenses down there. He came and told us there might be 'crown gall,' or some 'little peach' or 'curl,' and fixed up enough spray to go over about five hundred acres. We applied it, and when we had finished the leaves were dead, the twigs were dead, and the young fruit dropped and our crop was lost. The trees failed to show any buds the next year, and we lost a second crop, and our manager estimated the loss at $10,000. Now the inspector says he does not want to give us unnecessary trouble or cause us loss, but where is our remedy when troubles and losses like this come? How are we going to get that $10,000 from him?

"We do not want to suffer any more, but are anxious that the truth shall be known and prejudice and poor judgment set aside. Some of us are getting along in years, but we want to go on building orchards, and ornamenting the grounds surrounding the homes and avenues of our cities and towns, pleasing the eyes of the people; pleasing them also with the fruit which grows from the trees as well. We want to give them esthetic education, creating an ambition and aspiration within them to build finer homes, dressing them up and making them veritable Edens upon earth. You cannot anchor the boys and girls to the city and country homes more surely than by planting trees and shrubs and inviting round them the birds and the trees and the sweets of earth. Then you will have a happy people, but you cannot have all these if you destroy the nurserymen."

Mr. Kirkpatrick is a Southener of the old school, a man of fine character and a high order of intelligence. He was so forceful, however, so bitter in his denunciation of the evils which the inspectors do the fruit interests, and particularly to the nurserymen that I fear had our California Commissioners been present they would have taken severe issue with him on his scathing remarks.

I am a mild-mannered, good natured sort of fellow and do not expect to arouse your feelings to a pitch such as Mr. Kirkpatrick would do, nevertheless I do not hesitate to say that the nurserymen of California are becoming more and more surrounded by a complication of horticultural laws, so that they are constantly facing propositions which make it very difficult for them to do business beyond the confines of their respective counties. This is not an insinuation that the horticultural commissioners of this state are wilfully trying to injure the nursery business, but, nevertheless, the fact exists that influences are often brought to bear on commissioners, which work serious injury to the nursery interests, and they can be regarded as nothing more than restrictions of trade, with absolutely no equity in law to support them.

I am going to show you by actual facts just what has occurred in several instances:

In December, 1906, I read a paper in Hanford on this very same subject, in which I expressed my views relative to the unfairness to the nurserymen of many of the county ordinances. At that time I quoted from an opinion given by Hon. U. S. Webb, attorney general, which I take the liberty of again repeating, as I think it should be impressed on your minds.

"Your fourth question is as follows: 'If county boards of supervisors have authority to pass a horticultural quarantine law, can they pass a general ordinance declaring any or all nursery stock or grapevines brought into their county from any part of the world a nuisance, without any inspection of the stock?'

"It is my opinion that ordinances so sweeping in their nature as you describe would be held by the courts to be unreasonable and void, as arbitrarily declaring that to be a nuisance which was not in fact a nuisance. To make an occupation indispensable to the health and comfort of civilized man, and the use of the property necessary to carry it on, a nuisance by a mere arbitrary declaration in a county ordinance and suppress it as such, is simply to confiscate the property and deprive its owner of it without due process of law."

I want to say further that the Hon. H. Z. Austin, superior judge of Fresno county, rendered a decision against the supervisors of Fresno county, in which the county was compelled to pay damages because a lot of grape cuttings, which were shipped from Contra Costa county to Fresno county, were destroyed by the horticultural commissioners, although the cuttings were not diseased. They claimed the right to do so under the ordinance which peremptorily prohibited the importation into Fresno county of grape vines or cuttings, north of a certain boundary line established by our supervisors.

A few years later phylloxera was found in Fresno county, and what was the result? Tulare county passed an arbitrary ordinance in the very height of the nursery season, causing me to have several thousand dollars worth of orders for grape vines cancelled, which were ready for delivery. In my paper read at Hanford, I expressed my opinion of the unfairness of this ordinance and had the pleasure of learning later in the day during this session that the supervisors proposed to fight the matter to the bitter end. What was my surprise to learn that within a month a new ordinance had been framed permitting the shipment of grapevines into that county providing the nurseryman gave a bond of $5000 to cover his delinquencies. Did I give the bond? Why, of course. Now our vines are shipped into Tulare county without any restrictions. What was the reason for this sudden change of heart? Not my paper. Oh no! But because a certain nurseryman who was formerly a citizen of Fresno county had changed his residence to Tulare county, and had grapevines growing in Fresno county. They did not want to fight a citizen of their own county so the ordinance was modified.

Stanislaus was the next county to fall in line with its prohibitive law. And what happened? One of the supervisors who voted for this ordinance, came up to Fresno county, purchased two carloads of grapevines and shipped them into his county. What was the reason? None other than the varieties wanted were difficult to obtain and the prices charged in his county for grapevines were unreasonable. The vines were passed without a word of protest. What would have hapened to Roeding had he made this shipment?

Even Kings county had to have its little axe out. What did it do? Made it compulsory for the nurserymen shipping stock into the county, as well as the purchaser, to give a bond of $5000 before stock would be delivered to him.

It is useless to say any more of these restrictions, for it will take up too much of your time. I can not, however, forget Tulare county's latest. It has quarantine stations compelling the shipment of all stock to specific points before the stock can be transported to destination.

Primarily this ordinance was framed for the purpose of protecting the citrus interests of this county. As practically all the citrus trees are shipped in carload lots, it worked no great hardship, but with deciduous shipments it certainly played havoc, for it meant the unpacking of bales and boxes, work which must necessarily be done with much care in the nursery. The tearing apart of these packages, which it was out of the question to put together properly again, has been the cause in many cases of having stock reach destination in bad condition, and the consequent strained relations between the nurserymen and purchasers.

At the meeting in June, in Sacramento, there was a tendency on the part of certain commissioners to adopt this same ordinance in other counties. I beg of you not to do so. Give the nurserymen of California a little respite and do not throttle them any more than you have already done. I want to reiterate that our state law serves every purpose; live up to it and no man in the fruit or nursery business will have reason to complain.

You must all concede that a nurseryman is a benefactor. Who has grown the trees, vines and plants, which have made California's name famous in the horticultural world, if it is not the nurseryman? Who is responsible for the introduction of the best fruits of the Old World, and the introduction in many cases of new varieties of fruits, if it is not the nurseryman Is the average nurseryman not a responsible citizen, trying to make an honest living by producing trees which every fruit grower must have? Then why go on passing restrictions upon restrictions making it more difficult year after year for him to conduct his business?

Who is it that invariably introduces a new pest into a locality? It is not the nurseryman, but usually some amateur fruit grower who with no other object in view than to save a few cents on his purchase of trees, introduces a disease or insect which not only costs the state but the nurseryman as well thousands of dollars, the pest in many cases being of such a nature that eradication even by the most stringent measures, is utterly impossible.

California with her wonderful resources has taken the lead in the horticultural world, and it must be conceded that more has been done to advance our horticultural and viticultural interests along modern commercial lines, not only as compared with every state in the Union, but I believe I am not making a rash statement when I say that she stands supreme over every nation of the world. Her horticultural laws are the basis for the laws of every state and territory engaging in the fruit business and strange as it may seem, it is nevertheless a fact that the states seem to vie with each other in seeing how much more severe, how much more drastic they can make their laws to restrain the nurserymen from doing business.

I am pleased to say that there is hardly a man among the old commissioners in California whom I do not esteem as a friend. I have no great personal grievance; I have been accorded the fairest treatment by these men as far as their ordinances will permit. This fight I am making is one of principle. I don't want to hear the old story that we are not fighting you or any other nurseryman except on your shipments of grapevines. I want to say in reply to you, if an ordinance which so effectively prevents the shipment of grapevines into a county may be so easily enforced, what is to prevent the adoption of measures which will be equally as effective against any other class of stock?

In conclusion, I wish to say that I hope to live to see the time when the stigma which is attached to a man engaged in the nursery business may be removed, and when the nurserymen and horticultural commissioners will join hand in hand in the upbuilding of this great garden spot of ours, by making better, finer, cleaner fruit and maintaining a standard which will make us a world power in every branch of horticulture.

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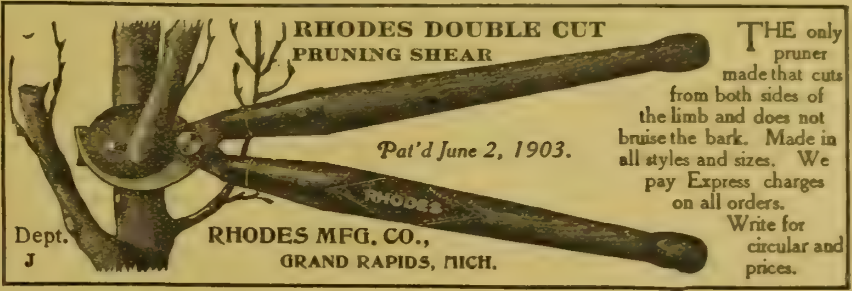

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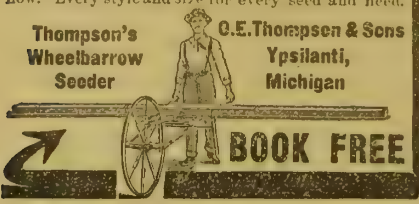
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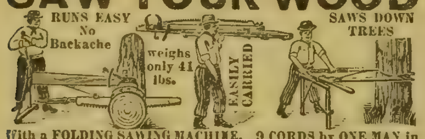

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For the past four consecutive years it has been the pleasure of The California Cultivator to say a good word for the annual Tulare County Citrus Fair, and for a like period it has been the privilege of the editor, in conjunction with R. M. Teague, to act as judge for the citrus division. Allowing for these facts, the writer has gained a perspective of not only the fair itself, but also of the developing atmosphere that is so pronounced a feature of Central California at the present time. With the passing of the years it is gratifying to note the advances that have been so pronounced in citrus culture in the thermal belts of the great San Joaquin Valley, and the annual betterments that have taken place in the fair itself. The one that held sway December 5 to 10 was no exception to the optimistic opinions here expressed; quite to the contrary, it developed such strength and wide public interest throughout the State that it has inspired the horticultural-agricultural interests in the county with the idea of making it as much of a regular annual function as the State Fair at Sacramento or the State Fruit Growers' Convention, with a permanent home at Visalia—the most central point in the county, and hence the pivotal point for exhibition purposes. People from as far north as San Francisco and her environs, and as far south as San Diego were in evidence, and agreeably surprised at the quality and extent of the exhibits. The attendance was large, averaging something like 2500 daily, or about 15,000 for the week. This, when coupled with other sources of revenue, leaves a handsome sum to the good for the fair of 1911.

The Feast for the Eyes.

Obviously, the big attraction from a horticultural point of view was the display of citrus fruits, but in addition thereto were fine exhibits of deciduous fruits in season, garden and field crops, vineyard products, canned, bottled and cured orchard crops, and dairy products. The arrangements were fine—at once satisfying the canons of good taste and meeting the exigencies of comfort and convenience; but the greatest asset of the enterprise was the unity of action and individuality of purpose evinced, not only by the business men of Visalia, but by the entire fruit interests of the county—all elements that stood out for success in the fruition of the enterprise. All who participated were more than satisfied.

The Locality Exhibits.

In spite of the fact that locality exhibits are efforts calculated to impress and draw the attention of the masses rather than that of the experienced grower and expert in fruit culture, the ones here shown were not only artistic efforts, but did "bunch up" some of the finest fruit that the sun ever shone on. But in addition to this, in design, decoration and execution many were strikingly original and possessed of a strong horticultural atmosphere. This is as it should be, and it is certainly a sign of progress to see improvement from year to year in this direction. Fruit displays in design and execution should be redolent of the soil and be suggestive of an artistic temperament. The arts of the factory and the goods of the store should be supplemental, not the first consideration.

The most striking locality exhibit and the winner of first in its class was that of Strathmore, a new citrus colony situated between Lindsay and Porterville. As will be noticed on our first page illustration it consisted of a square, in the center of which was the revolving world announcing on its West Coast the astounding news that between Los Angeles and San Francisco there is but one other town, viz., Strathmore; a josh that made its point by putting the new settlement on the map. At one of the four corners was worked out a Maltese cross, at another a shield, at another an anchor, and at another a horseshoe in oranges and lemons. Interspersed at right angles were pyramids of citrus fruits, and baskets of semi-tropical fruits; at regular intervals were potted ornamental foliaged and flowering plants; the remaining decorations were festooning and greenery. The entire exhibit was overhung with a canopy surrounded by electric lights, the color scheme being in delicate shades of green, orange and white. In design, harmony and decorative effects the exhibit was one of the most perfect ever shown. Strathmore being new, commercial production is not yet possible. The fruit shown was all harvested from trees less than five years of age.

The winner of second place was that of Exeter, showing as its central feature a Ferris wheel in action carrying boxes of citrus and deciduous fruits and colored electric lights. The ground or base of the display was neatly worked out in citrus fruits, showing oranges, lemons, limes, pomelos, etc. Fruit was of good quality, in a number of the individual exhibits winning first.

The winner of third honors lost to second on design and decorative quality—the oranges and lemons shown by Lemon Cove being easily in the first class. Judging only by looks, the judges pronounced it perfect—and the lemons certainly were beauties. Had Lemon Cove thrown more stress on decorative quality, she would have taken second. Even as it was, the exhibit ran high in the individual classes, winning the largest number of awards.

Dinuba came in with a unique exhibit consisting of a center piece representing one of the old-fashioned windmills that are so prominent a feature of the landscape in Holland. This was neatly worked out in oranges, and decorated with bunting and electric lights in the four arms. The base or ground plan showed choice specimens of grapes, olives, oranges, lemons, apples, etc. For originality it was one of the features of the fair.

Visalia's showing was the horn of plenty, picturing nearly every product of the surrounding country from peanuts to tobacco, from sunflowers to Japanese persimmons. Here was shown the celebrated Beta vulgaris Balaami, the biggest beet that ever beat the game, and also the great Cucurbita Subjohnsoni, said to be a member of the Johnson pumpkin roller family, indigenous only to Visalia. The exhibit was a splendid object lesson of the diversity of soil products that is spreading the fame of Tulare county in the four directions of the compass.

Orosi maintained its fine reputation for the production of citrus fruits in a chaste and simple exhibit which possessed harmony of design and color. It was a square pillar effect, painted pure white, with decorations in green and yellow, which blended nicely with the color of the fruit and the ornamental foliaged plants with which it was ornamented. In addition, the Board of Trade of Tulare county had a large exhibit of cured, bottled and canned products in an attractive booth.

Lindsay's exhibit was the most commercial in the room, the fruit exhibited being of uniform size and color and very carefully packed. The boxes were arranged in the form of a huge swastika, and the interstices were filled with displays of other fruits. A sly dig was conveyed to Florida in a display of "sour Florida oranges" side by side with a plate of perfect blood oranges on the border of the exhibit.

Porterville had a great pyramid of carefully selected oranges and lemons, surmounted with a placard bearing the well-known slogan, "Porterville People Prosper." Pomegranates and other fruits were shown, to prove that Porterville has the horticultural versatility of other places.

Three Rivers had a large and beautiful display, one interesting feature being a map in which lines of red Winesap apples traced a reproduction of the north, middle and south forks of the Kaweah river through a plain of well selected oranges. In the background were cleverly arranged groves of little eucalyptus trees flanking the mountain range in the background.

The four Granges of Tulare county had a unique exhibit showing in the products of the county a rough map of its territory. Prominent in the display was some dried fruit, which won first prize in its class, sent in by the Granges.

A great number of bottles of pure California oil, all attractively arranged on shelves, formed the exhibit of the Dubrovnik ranch. In addition bottles of olives were arranged about the booth. Peter Piplick, late of the royal olive groves of Austria, was in charge.

The display of apples made by George Dillon of Springville must be regarded as one of the great features of the fair. On his ranch was produced the fruit that won first at the Irrigation Exhibition at Chicago, competing against the national field on apples. The Arkansas Blacks, Ben Davis and other sorts were indeed superb specimens of their kind.

Another showing, though not of a horticultural nature, was the showing of dairy products by the creameries having their headquarters at Tulare City. Allowing for the fact that Tulare county is now the leading producer in butter in Central California, this fine showing of commercial packs of butter fat was typical of the progress and development of her dairy interests. The bulk of this product finds a market in Los Angeles.

The beauty of all of these exhibits was greatly enhanced by the color scheme of orange, green and white, with which the interior of the building was decorated. No less than twenty thousand yards of cotton cloth was used in the effort.

THE AWARDS.

Department One.

Best display citrus fruit from any locality in Tulare county:
First premium—Strathmore; $75.00.
Second premium—Exeter; $50.00.
Third premium—Lemon Cove; $25.00.

Best display of citrus fruit by any one grower in Tulare county:
First—Kaweah Lemon Company, Lemon Cove, $25.00.
Second—J. E. Barton, Three Rivers, $15.00.
Third—H. C. Carr, Porterville, $5.00.

Best display of oranges, all varieties, exhibited by any one grower:

First—Kaweah Lemon Company, Lemon Cove, $10.00.
Second—H. S. Carr, Porterville, $7.50.

Best display of lemons, all varieties, exhibited by any one grower:

First—Kaweah Lemon Company, Lemon Cove, $10.00.

Best 12 specimens of Washington Navels, exhibited by any one grower:

First—Mrs. M. E. Randolph, Exeter, $7.50.
Second—T. A. Pogue, Lemon Cove, $5.
Third—Kaweah Lemon Company, Lemon Cove, $2.50.

Best 12 specimens Thomson's Improved Navels, by any one grower:

First—E. A. Miller, Springville, $7.50.
Second—C. A. Hotchkiss, Exeter, $5.00.
Third—W. R. Senter, Lemon Cove, $2.50.

Best 12 specimens budded oranges, exhibited by any one grower:

First—H. E. Ward, Orosi, $7.50.
Second—A. J. Bump, Orosi, $5.00.
Third—W. R. Robb, Orosi, $2.50.

Best 12 specimens seedlings, exhibited by any one grower:

First—R. B. Montgomery, Lemon Cove, $7.50.
Second—H. C. Carr, Porterville, $5.00.
Third—C. E. Jaynes, Exeter, $2.50.

Best 12 specimens lemons, exhibited by any one grower:

First—Jim Pogue, Lemon Cove, $7.50.
Second—W. R. Park, Lemon Cove, $5.
Third—Kaweah Lemon Company, Lemon Cove, $2.50.

Best 12 specimens grapefruit, exhibited by any one grower:

First—Roeding & Wood Nursery Co., Exeter, $7.50.
Second—Mrs. M. E. Randolph, Exeter, $5.00.
Third—J. E. Barton, Three Rivers, $2.50.

Best 12 specimens of seedless limes, exhibited by any one grower:

First—A. Patten, Springville $7.50.
Second — Kaweah Lemon Company, Lemon Cove, $5.00.
Third—Roeding & Wood Nursery Co., Exeter, $2.50.

R. M. TEAGUE,
H. W. KRUCKEBERG,
Judges.

Department 2—Class I.

Best display of dried fruits from any locality:

First premium—W. A. Bates, Dinuba, $25.00. No competition.

Best display fresh grapes from any one grower in Tulare county:

First Premium—H. H. Moore, Dinuba, $7.50.
Second premium—W. N. Barr, Dinuba, $5.00.
Third premium—F. J. Beinhorn, Orosi, $2.50.

Best display of fresh olives from any one grower in Tulare county:

First premium—J. J. Cairnes, Lindsay, $7.50.
Second premium—Jacobs Bros., Visalia, $5.00.
Third premium—G. S. Berry, Lindsay, $2.50.

Best display of apples from any one grower in Tulare county:

First premium—Geo. Dillon, Springville, $25.00.
Second premium—W. A. Bates, Dinuba, $15.00.
Third premium—Eugene McKinley, Visalia, $10.00.

Department 2—Class II.

Best sample of strawberries—Marion Carter, Three Rivers, first, $1.00.

Second—Chas. Reich, Visalia, 50c.

Best sample of fresh pears—Marion Griffeths, Three Rivers, first, $1.00.

Second—A. Peterson, Tulare, 50c.

Best sample of Japanese persimmons—Mrs. L. L. Thomas, Exeter, first, $1.00.

Second—Visalia Orchard Co., 50c.

Best sample of quinces—J. E. Barton, Three Rivers, first, $1.00.

Second—R. N. Allen, Dinuba, 50c.

Best sample of pomegranates—B. F. Bailey, Exeter, first, $1.00.

Second—Courtney Talbot, Springville, 50c.

Best sample of tomatoes—Elias Cregg, Visalia, first, $1.00.

Best sample of white potatoes—J. M. Tout, Visalia, first, $1.00.

Second—C. O. & T. C. Newman, Visalia, 50c.

Best sample of cabbage—Tom East, Visalia, first, $1.00.

Best sample of watermelon—Clarence Fay, Visalia, first, $1.00.

Second—J. T. Lawson, 50c.

Best sample of muskmelon—J. T. Lawson, first, $1.00.

Best sample of pumpkin—Tulare County Grange, first, $1.00.

Second—J. Sub Johnson, Pumpkin Hollow, 50c.

Best sample of squash—John Abshire, (Grange), first, $1.00.

Second—J. E. Barton, Three Rivers, 50c.

Best sample of Egyptian corn—Jacobs Bros., Visalia, $1.00.

Second—Henry Moore, Visalia, 50c.

Special mention—Basket fresh peaches—Jason Barton, Three Rivers, $1.00.

Fresh eggplant—Jason Barton, Three Rivers, $1.00.

We recommend that mention be made of the fine display of assorted vegetables and cereals exhibited by Alpaugh, and that the premium of $7.50, given for vegetables, be given to Alpaugh.

J. C. BRIGGS,
B. C. ANDERSON,
M. T. MILLS,
Judges.

Department 3—Plants.

Best and largest collection of house plants:

First premium—Mrs. W. R. Spalding, Visalia, $7.50.
Second premium—Mrs. A. D. Sweet, $5.00.
Third premium—Mrs. Carrie Thomas, Visalia, $2.50.

Handsomest collection of cut flowers:

First premium—Mrs. A. D. Sweet, Visalia, $7.50.
Second premium—Mrs. J. E. Scheeling, Exeter, $5.00.
Third premium—Mrs. W. R. Spalding, Visalia, $2.50.

MRS. I. H. THOMAS,
MRS. R. C. MERRYMAN,
Judges.

Department 4—Dairy.

Best exhibit dairy products from any locality in Tulare county:

Tulare City, first premium, $75.

No entries for second and third premiums.

Petals and Thorns.

It was gratifying to learn that not a single exhibit handled by the judges showed any evidence of scale insects.

Burnishing and rubbing competitive exhibits may remove deleterious substances, but it also removes the natural bloom which "cuts" the fruit three points on condition.

One of the interesting things that were missing was exhibits of commercial or standard packed boxes of oranges and lemons, which should be added to the list of premiums at future fairs.

Five years ago Strathmore was a grain field; today she is on the map as a citrus section. The fruit she displayed was harvested from four or five-year-old trees, which fact tells its own story.

No one thing was more impressive than the elaborate system of electric lighting that was put in, not only at the fair proper, but in the town of Visalia. Every street was a perfect labyrinth of bulbs and wire.

With an executive head like J. Sub Johnson and C. F. Balaam, any sort of an old thing would be made to "go;" but when such a team is backed by a whole community, the driving power becomes a whirlwind.

If Visalia builds a pavilion capable of housing the fair in good shape, it will certainly tend to make the event an annual feature of that town. Being a central point, it has everything to commend it for such a purpose.

More careful selection of fruit in conformity to commercial requirements is advisable. Some of the exhibits shown would have been disqualified in the packing house, let alone winning honors in a competitive exhibition.

Lindsay is the heaviest shipper of citrus fruits at present in Tulare county; this distinction she will hold for a while, though other sections are rapidly developing. At present Porterville, Merryman, Exeter, Lemon Cove, Naranjo, Plano, Globe and Orosi follow in the order named.

As it is quite generally known to The Cultivator readers, this was the fifth citrus fair held in the county, and the first for Visalia. The board of directors included J. Sub Johnson, A. Lewis, Sus Mitchell, Harry C. Locey, Leon Goldstein, J. G. Fikenstein and John C. Hayes.

A. L. Hobbs, president of the Fresno Chamber of Commerce, said that, "If Fresno will not hold a citrus fair, we are glad that Visalia can and will. Fresno can hold a fine fair, but she has never undertaken anything as elaborate as this. Visalia may be in the southern part of the valley, but the success of the present fair will mean much for the valley as a whole."

Wood borers have been found to be the cause of death of many eucalyptus trees about Redlands. This pest has been a serious menace to Australian groves. The only remedy found is spearing the larvae in their holes with pointed wire.

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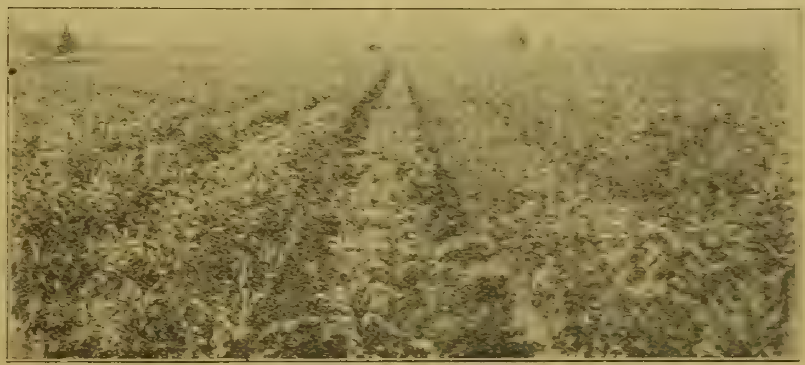

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Send for Free Price List.

The Ornamental Garden

TREES FOR PROFIT AND BEAUTY ON THE FARM.

Trees are dual-purpose in their returns. Profitable timber and useful beauty are their generous rewards. When our forests stood in primeval integrity lumber was cheap. One of our chief agricultural problems was to clear the land of trees and brush. With reckless, wasteful axes pioneers chopped their way to the coveted soil. Fire aided their destructive invasion. Ashes, incorporated with the leafy humus of ages, represented their work. Cultivated crops succeeded ancient monarchs of the woods. Deforestation did not stop at the areas capable of agricultural use; it went out of its way to make man's conquest complete. Trees in hollows and on precipitous surfaces were felled in order that grass might grow. Even to this day the wanton slaughter of trees continues, but thoughtful men here and there have begun to show an encouraging interest in the preservation of forests and the planting of commercial and ornamental trees.

Parts of almost every farm could well be devoted to commercial trees, planted with care and properly developed. As sources of posts, poles, ties, sills and lumber they would pay immensely, for the scarcity of suitable woods for the hundreds of uses to which they are adapted, and the keen demand for them insure profitable returns.

Trees are entitled to an extensive foothold in all agricultural regions, without regard to their attractive commercial possibilities. Our farms could be made infinitely more satisfying and charming by the presence of long-lived shade trees in yards and lawns, scattered along division fences, in pastures and even in large fields. All the land that a stately tree claims as its own can be spared by any farm-owner. Our appreciation of trees is not yet sufficiently developed to make us enthusiastic and active on Arbor Day. We like trees too well for lumber and too little for themselves. If corn is yellow and sickly under the spreading branches of a venerable elm we think of the axe instead of the grateful shade with which the tree refreshes man and his beasts. In our sordid zeal for cash we become blind to things that money cannot buy. It takes a patient, home-loving, land-loving people to see profit in forests, and we Americans are not yet qualified for such systematic, painstaking work with trees as the Germans have been doing for many years; but we are taking hold of elementary principles with promising interest.

Practical farmers as a rule do not allow themselves to be influenced by artistic values, contending that "busy men on high-priced land" cannot afford to "fool with the beautiful unless it pays." Nevertheless, almost every one of them inwardly feels and craves natural beauty in all its simpler outdoor forms. Men have planted trees, shrubs and vines who could not write their names. Women who never saw the inside of a schoolroom are instinctively drawn to floriculture, and tiny spaded beds, covered with brush to entangle the mischievous feet of poultry, could now be found in thousands of yards presided over by farm women. It is not book education that causes men and women to love trees, plants and animals. It is the passion of the inner life for outward relationships. This universal, vital emotion has much to do with man's happiness and success on earth. For this reason the beauty with which any farmer easily may environ his home and distinguish his land pays in many subtle ways. Children reared where nature has expression in trees and other forms have a resource and a quality in their later lives that prove the potency of beauty in character-building. Environment is sculptured in memory; it enters into the fiber of life. It is intimately related to adult efficiency and character.

Farmers with families cannot afford not to plant trees, evergreens, shrubs and vines for beautification and profit. If boys and girls are the best crop that our farms produce they should have their impressionable years filled with all the ennobling pictures that can be thrown upon nature's great canvas—the earth. To perfect this crop under favorable conditions it is essential to enrich, beautify and broaden country life, and in achieving these ends we shall encrease our own health and happiness many fold. A man who plants a tree delights in its growth. If in some vision he sees his grandchildren playing on the grass beneath its cooling shelter his affection for it is heightened and he is a better man.

State, municipal and private forests, managed on the same general plan as our national forests, are sure to come. So many important purposes are served by trees that the country cannot long afford to ignore them as one of our most valuable resources.—Breeder's Gazette.

MAKING A GOOD LAWN.

To make a good lawn the soil should be rich as a garden. It is too often that the soil is poor, and every crop of grass is swept off, and nothing except water given to assist the grass roots and restore the soil, and the grass is mowed close to the ground, so that instead of a soft, velvety green lawn springing to the foot, you have a hard, poor, thin, colorless piece of ground. Rich soil, good and deep, the mower set so it does not cut close to the roots, sufficient water, twice a year renew the soil with a fertilizer, or mow often and leave the mowings for a mulch, and I will guarantee a good green lawn. I do not need to say that for the credit of the workman the lawn should be so made that a straight edge will not vary half an inch over the whole.—Farm and Ranch.

One of the most wonderful roses is a wild inhabitant of the United States—the Cherokee rose. It is an emigrant from China, but it was known to botanists as growing in Georgia and the Carolinas before it was known to be a native of China. In a botanical work published in 1821 it is mentioned as having been "cultivated in the gardens of Georgia for upward of forty years, under the name of the Cherokee rose." How it first reached this country no one knows, but it soon escaped from its first American garden to the woods, and became so common there that it acquired the name of the tribe of Indians which occupied the upper part of Georgia and the Carolinas.

Garden and Field Crops

POTATO AMBASSADOR.

It was the late Dean Hole, was it not, who sang of beauty in the radish, though it lives below in gloom. For its leaves are "gay and gladdish," though its heart is in the tomb. Surely the Dean would have delighted in Mr. Eugene H. Grubb, who is now visiting the United Kingdom and Europe studying potato culture on behalf of the Department of Agriculture of the United States. Mr. Grubb is devoted to potatoes. He is a big expert. An American, with his wife and daughter, walked into a Strand restaurant of blameless repute a few days ago. "Delicious stew and joint," they said, "but the potatoes!" The Puritan father was shocked. A Strand chef acknowledged afterwards to having learned more about potatoes in ten minutes that afternoon than in all his life before. Mr. Eugene H. Grubb, of Carbondale, Colo., taught him.

"You throw away the most edible and valuable portion," Mr. Grubb told a Daily Graphic representative who talked with him at Bardill's hotel; "the outside layer, about a quarter of an inch, lying under the skin. Your people pare that off. If people were properly educated to the value of potatoes as a delicacy, the consumption of the world would be doubled. The English people do not know the luxury of a baked potato. It is one of the favorite dishes in America. Your methods of serving potatoes are crude, primitive."

Studying Potatoes.

Then why, it may be asked, is Mr. Grubb here to learn? Simply because America wants to know more about the growing and marketing (as distinct from eating) of potatoes. He is visiting all the fairs and great farms. He has been to Lord Rosedale's and Sir Walter Gilbey's; he is going to Lord Rothschild's and to Lord Roseberry's Dalmeny station. His mission means a study of the whole industry this side of the Atlantic.

"We grow, in round figures, 300,000,000 bushels annually; we need at least 450,000,000. You grow in the United Kingdom as many as we do in the whole United States, and your yields are as three to our one per acre. The state of Idaho alone could produce all that the whole United States now produces—if the industry were developed to its maximum."

Not only our extravagance in potatoes strikes Mr. Grubb. Our market methods, he says, would break an American farmer's heart. "I buy in London a basket of strawberries, £4½ or £5 10d. They are put up in a basket with a tin handle costing 3½d. In America we would put them in a package costing less than a halfpenny. I saw potatoes from Canary and Jersey arriving in crates of seventeen pounds tare in eighty-five pounds—a package made of lumber double the thickness necessary. I don't know, of course, about your social conditions. You may do that sort of thing in order to employ the great surplus of cheap labor you have here. Again, you use the old, old carts for bringing products to market. Some of them are at least seven feet high. It costs money to lift a hundredweight seven feet. In America we have low-bodied trucks and very low-wheeled carriages. On an average your English farmer raises all his crops double the height, to market or stack, that the American farmer does. Because we use machines more and more and hands less, farming in America is not restricted to people of strong physique. Some of our most successful farmers and stock people now are women."

American Farming.

"Your farms are more beautiful," continued Mr. Grubb; "your farm life has more comforts. The artistic instinct is strong in England. Your agriculturist is a factor in the social system. Your farmer wears a silk hat, carries a cane, dresses for dinner, keeps a coachman. Yet the English tenant-farmer would be looked down upon in America, where a man who does not own his own land is the object of criticism. Your successful farms are over-capitalized; ours are under-capitalized. That is the greatest drawback to American farming."

Mr. Grubb wants more British well-to-do men and women to share in the agricultural awakening in the states. But he sees a fine future at home for British farmers. "With your splendid markets and climate, your agriculture will have splendid opportunities when given methods more economical. Uncle Sam has no more farms to give away. Our granaries are exhausted; our feed lofts are understocked. We cannot send you any more cheap foods from America. You have a wonderfully bright future —brighter, in my judgment, than you have had ever since I have known anything of agriculture. Our population is increasing so rapidly that unless we study how to get better yields we shall be an importer of foodstuffs in ten years."

Which brought the Potato Ambassador back to his potatoes.—G. T., in London Graphic.

MEDICINAL VEGETABLE FOODS.

Cranberries correct the liver.

Asparagus stimulates the kidneys.

Carrots are excellent for gout.

Watercress is an excellent blood purifier.

Parsnips possess the same virtues as sarsaparilla.

Celery contains sulphur and helps to ward off rheumatism.

Bananas are beneficial to sufferers from chest complaints.

Celery is a nerve tonic; onions also are a tonic for the nerves.

Beet root is fattening and good for people who want to put on flesh.

Tomatoes are good for torpid liver, but should be avoided by gouty people.

Lettuce has a soothing effect on the nerves and is excellent for sufferers from insomnia.

Spinach has great aperient qualities and is far better than medicine for sufferers from constipation.—Snowdrift.

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(Continued from Page 595.)

ter orchard practice by adopting a system that eliminates unfit and worthless qualities of fruit. They are putting into practice the admonitions that have heretofore been noticed only in the preaching. They have tried in a most practical way to elevate and make uniform the quality, packing and the retailing value and convenience of selling our orchard products.

"The effect of standardization is fourfold. First, it excludes all fruit unfit for profitable trade, and thus discourages overproduction; second, it increases the demand for California fruits, and thus makes distribution wider, more certain and less in cost of selling; third, it protects and stimulates the grower of good fruits and makes his land more valuable by eliminating from competition lands and fruits of no value; fourth, it enforces better horticultural practices, and thus gives dignity and distinction to an occupation that is now thought by many to be of such a low order that anybody can follow it successfully. It will help to bring back the right kind of fruit growers to the land.

"Let us now as briefly as possible discuss the morals and consistencies of fruit merchandizing. The signs of the times indicate that the public at large is being driven by self-protection and self-respect to enforce honesty and square dealing in the monetary and mercantile transactions of the country. Uprightness of dealing, whether involving the purity of a food or the probity of a gigantic deal in stocks; whether manipulating a false measure in selling molasses or manipulating a fraudulent corner in controlling the necessities of life or what not—uprightness of dealing is the greatest issue of modern times.

A SAN JOAQUIN COUNTY BERRY FIELD.

"The stability of our very institutions demands that the average man be given a chance for his life. But he must make himself worthy of the square deal. He must come with clean hands to demand his rights. If he 'deacons' his apples, places a false bottom in his milk measure or hides little, measly peaches in the center of the box faced with first class fruit, can he demand with a clear conscience that the corporations cease to oppress him or that bribery and graft cease to absorb his hard earned tax money?

"There is at present a great and increasing determination to revise the tariffs upon the basis of the common weal. When revision reaches the fruit schedule, California must be able to show that the present protective tariff rates are a benefit to the consumer, or at least do not materially increase the price of her peculiar orchard products that have become necessities to her customers in the East. It must be shown also that her growers and shippers have not taken advantage of the trade by foisting upon it poor qualities that could not find sale without the tariff. The verdict must be: California's fruit is worth protecting. California is not oppressing the consumer; she is furnishing him with wholesome, honest products, and her fruit industries must be protected and the interests of a great and distinctive state maintained against the cheap labor of the old countries. This idea has been one of the dominant features of the standardization, and I know of no argument so strongly in favor of continued protection as that of honest packing, high quality and uniformity of service."

Much Interest.

There have been many larger conventions held in the state. In fact, when the gavel fell at the opening session only thirty people were present. The attendance was, of course, greater at the other sessions, though at no time was it as it should have been. The local attendance was practically nothing, one of the attendants estimating that less than ten per cent of those present were from Stockton. It is proverbial that local people give these conventions scant attention, but Stockton will crowd close to first place for indifference. The local attendance at Music Hall on Wednesday evening at the reception and entertainment for The entertainment consisted of a remarkably good musical program followed by a dance.

The automobile ride failed because of threatening weather, and a trolley ride to Lodi was substituted.

The horticultural commission of the state held their meeting on Tuesday evening. The president of the association, Mr. Roy Bishop, of Orange county, presided. Dudley Moulton treated of horticultural protective measures from the viewpoint of a horticultural commission. It will be quoted from at more length in a later Cultivator.

Mr. Roeding's address on Nursery Inspection appears on page 569 of this issue. The inspectors who took part in the discussion admitted the weakness of the horticultural laws, both of state and counties, but insisted that it was to the interest of both the grower and nurserymen that the utmost vigilance should prevail. The lack of uniformity is, in fact, the greatest drawback. On this point some advocate the entire abolishing of county ordinances and dependence on the state law alone.

Wednesday and Thursday centered the interest of the convention on the reports from the different fruit handling and standardizing sections. These reports touched upon the table grape, peach, pear, and practically all green deciduous fruits. The papers read are too long to give in full in one issue, and many are being held to appear in the later issues of the Cultivator and Rural Californian. Many valuable points were made bringing out the mistakes of last year and the hopes of the coming. Thursday evening was given over to an address by W. A. Beard of San Francisco on the country life commission. In this he appealed for aid from the convention in advancing agricultural education and every possible movement looking toward the uplift of country life.

He was followed by Surgeon Rupert Blue of San Francisco on "Squirrel Eradication." Surgeon Blue reviewed the work of the Marine Hospital Service in its effort to stamp out the bubonic plague. Investigations have led to the discovery that not only the rat of the cities is responsible for the distribution of the tick which carries the disease to humans, but the rabbit, and even the house cat and the ground squirrel are carriers of this deadly disease. In fact, practically any furry animal may furnish a refuge for the tick until humans come in contact with it. The squirrel is the only one next to the rat that is of importance. Surgeon Blue gave figures showing investigations in many counties about San Francisco, and even half way up the San Joaquin Valley, an occasionad infested squirrel has been found. As yet none have been found east of the river, as squirrels have never been known to pass over a large stream. A large force of men is constantly at work killing and sending to the laboratory in San Francisco squirrels which are infested, to show the extent of the disease. It was urged that the supervisors of various counties maintain an active campaign against the squirrel pest not only because it is a carrier of this dread disease but for economical reasons as well.

Farm sanitation was handled in a very striking and entertaining way by Dr. W. F. Snow, Secretary of the State Board of Health. Dr. Snow's paper dealt with the human being very much as one would deal with horses or cattle; that is, from the commercial standpoint of value to the commonwealth. Dr. Snow began with the investments in the "animal," which were figured out in detail from $150, stork expense and nearly the same in "equipment" expense, then year by year as the child was carried through its life, until twenty years of age, it was found that the parents had invested in cash, outside of their own care and labor, the sum of $4200. As an example of the conservative figures used by Dr. Snow in estimating this cash investment in a human being, the annual upkeep, including clothing, food, etc., was placed at from $125 to $250, $250 being given during high school age. This took into account no expense for private lessons, music lessons, spending money, or any other items than the actual cost of food and necessaries. Dr. Snow assumed that the state bore all this expense which is in reality an additional investment for the commonwealth. From this standpoint he argued the necessity of protecting these human beings from preventable and postponable diseases. The ravages of the malarial mosquito were taken as one example of the five factors mentioned by Dr. Snow which could be largely controlled by care. In this he gave figures establishing the fact that the foothill sections of the Sierra Nevada which were watered by abundant streams flowing from the mountains were infested with this mosquito worse than other sections of the state. These counties have before them a great fight if they would reduce the percentage of malarial cases, two per cent of which result in death. Dr. Snow also gave figures showing the loss from the 200 or more deaths each year in this state from malaria and the 6,000 other cases which lower the earning capacity, and showed it to amount to millions of dollars yearly, including expenses for drugs, doctors' bills, nurses' care, etc. His statements were forcefully made, and we trust will serve to awaken interest in the necessity for greater care of human beings in this state.

LODI TABLE GRAPE VINEYARD.

Mr. G. P. Rixford of San Francisco, an expert of the Bureau of Plant Industry, having especially to do with the introduction of improved figs, long fibered cotton, and dates for the Colorado Desert section and in Arizona, in his address carried still farther his contention first stated at the Watsonville convention that the introduction of the blastophaga from Asia to this country was not accomplished first by Mr. Swingle or Mr. Roeding, as had been claimed prior to that time. He maintains that the beneficial insect was introduced into Stockton thirty years or more ago, and has existed there ever since in caprifigs introduced by Mr. West. Mr. Rixford's paper will be given more at length in a later issue of the Rural Californian.

One of the unexpected and very enjoyable events of the convention was the introduction to the attendants of Mr. H. E. Van Dieman, formerly connected with the Division of Pomology. Mr. Van Dieman learned of the meeting while in San Francisco on his way home from judging the National Apple Show at Spokane. He completely endorsed the papers which he heard given before the convention on the

(Continued on Page 611.)

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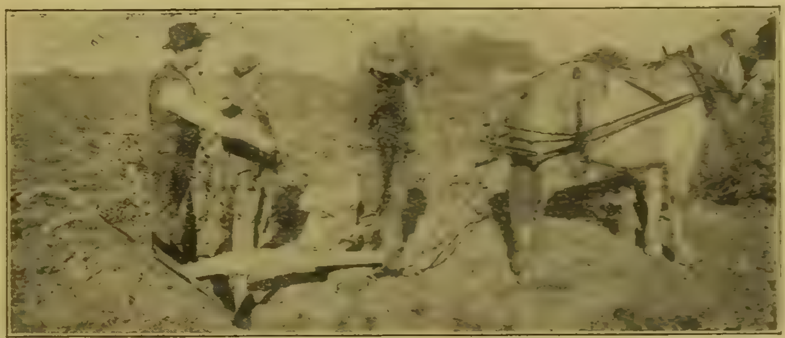
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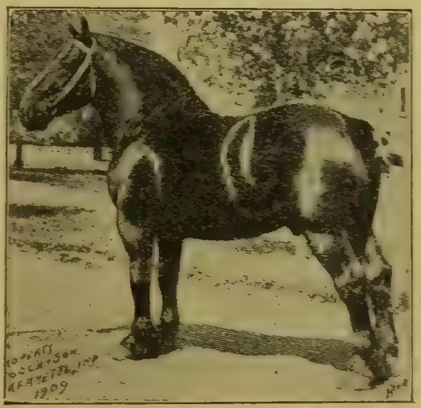
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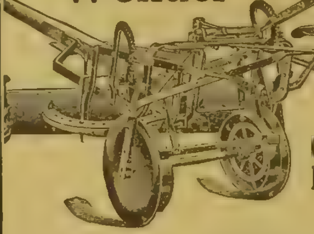

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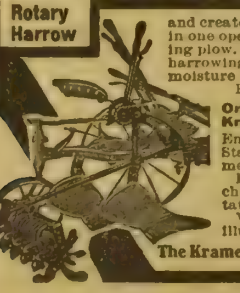

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SUGGESTIONS.

By Mrs. M. E. Sherman.

The lack of cleanliness seems to have become chronic in many people. The dairyman is harried from pillar to post over sanitary conditions. While he richly deserved it, still there are others. I saw a baker boy take the fresh bread from his wagon tuck two loaves under his arm, then let down the weight that kept the horse from straying. It stuck fast, when with one hand on the horse's sweaty rump he dangled it loose with the other. His hands then grasped the uncovered loaves and he delivered them. Let us hope it was a healthy horse, and one that had been groomed that morning.

Dairying.

The cow that any one milks on the farm does not receive the care the regular dairy cow expects. She is often neglected or only half cleaned and the water supplied her is scanty. The fact is that the dairy where milking is a business that is carefully looked after, supplies the cleanest and best milk. The professional milker uses dry milking as a rule. He has learned that wet milking is no easier for him, and does not practice it. The milk strainers must be kept clean, and here it is wise to watch carefully for bloody or stringy milk. Either of these are best kept out by carefully rejecting milk that shows this defect. This milk should go to the pigs if the cow that gave it is not ill otherwise. Then find out the cow and give her a good purge of epsom salts.

Smells.

The idea that smells from a cow's breath or from her droppings taint the milk has been slow to be received. Feeding onions, cabbage or alfalfa does not taint the milk directly. through the cow. No feed at all for an hour before milking should be made a rule. Dusty hay thrown into the mangers, filling the air with bacteria, will taint milk. Avoid this by having the racks filled and the grain put into the cow's manger after the stables are cleaned each time. Clean the floors, coat them heavily with gypsum and then close the doors and let the stable alone until next milking time.

Cooling.

The milk used to be run over coolers and aerators of various kinds. This was to cool quickly and let the gases escape. In theory all right, in practice all wrong. The milk did not keep sweet as long as that cooled in close containers. Cool the milk as quickly as possible in a clean place. This quick cooling and keeping cool of milk that is set in open pans has much to do with clean flavor in the butter. Where a separator is used rush the milk to it warm and after the cream is separated cool it as quickly as possible. In adding separated cream to that already in the vat, wait until the cream is cool. Usually the can containing the milk just separated is stood in the room where the rest of the cream is stored. After several hours it is added and well stirred to the bottom and sides of the vat.

Washing.

This seems a simple matter, but it requires constant drilling to make dairymen fill up the empty cans with cold water at once. Never let the milk or cream dry on the cans. After they are filled with cold water they may stand until time to wash them completely. Wash them until all the visible milk is removed in cold water, then use hot water and sal soda, follow this with pure scalding water. If there is a boiler, steam them well. If there is no boiler fill with hot water until the can is hot, then turn them upside down, out in the air to drain and dry rapidly by the heat of the tin. Never dry a milk can with a cloth, for that means trouble. Never use soap either. Cold water first to remove milk, for hot water merely cooks the milk and makes more troublesome the cleaning.

Kindness.

Gentleness pays in itself, for the cows are more pleasant to be with if they are gentle and fearless with every one. An excited, abused cow will not give wholesome milk. A little lady told me the other day of an experience she had recently. They kept one cow on account of the baby. Baby's papa was called away from home to the death bed of a relative. He was detained several weeks. A "kind" neighbor offered to milk the cow to help Mrs. Jones out during Mr. Jones' absence. After a couple of days the baby was taken ill with stomach and bowel trouble. The doctors could not find any cause but finally put the little one on some of the patented baby foods. It recovered promptly. After a week some more cow's milk was used with the results of a very sick baby. Then the idea came, maybe it was the cow. The stable was visited. The poor cow was found tied up tight and cowering down in fear whenever the door was opened. Mrs. Jones visited the neighbor and he said, "Yes, she was a mean beast and he had always to soak her a few bats in the stomach to make her give down her milk." This was stopped and the gentle cow was again petted and kindly handled, and baby never had any further trouble from the milk. If people cannot be gentle from a loving heart toward God's little ones (the animals) then let them remember it pays as a matter of dollars and cents. —M. E. Sherman.

YEARLY TESTS.

With the invention of the Babcock test in 1890, it became possible to both accurately and easily determine the butter fat production of a cow. The Holstein breeders were the first to embrace the opportunity offered by the agricultural experiment station to have their cows officially tested by representatives of the station, and thousands of such records have been made of purebred dairy cows of all breeds.

These tests have proven that it is possible for a cow to give 28 pounds of butter fat in 7 days under right conditions. But the dairy public, backed up by the experiment stations, demanded yearly tests in place of those of shorter duration, and the American Guernsey Cattle Club was the first to

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SAMPLES—Take surface sample from first foot: subsoil from between 2½ and 3½ feet depth; deep subsoil from between 7 and 8 feet depth. One pound is enough for a sample if well mixed before dividing down. PRICES—These prices are in force only while advertised.

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inaugurate a system of yearly semi-official testing.

The other breed associations rapidly fell into line, and now all of the registry associations of purebred dairy cows are encouraging the making of these tests. The results have far exceeded what was deemed possible ten years ago.

The largest record yet made is that of Colantha 4th Johanna, that gave 998 pounds of fat in 365 days. This cow is a Holstein, and is owned by W. J. Gillett, of Rosendale, Wis.

The largest record made by the Jersey cow is that held by Jacoba Irene, with a production of 952 pounds of fat in a year, and what was more remarkable in her case was the production of 2,331 pounds of fat in 37 consecutive months.

The largest record made by any Guernsey cow is that of Dollie Dimple, that made 906 pounds of fat, commencing at 3½ years of age.

The best Ayrshire record is that of Reno Ross, 674 pounds of fat in a year.

With improved methods of feed and care, records of 1,200 to 1,500 pounds seem to be within the possibilities. A valid objection that has been offered to these yearly records published has been the fact that the cows have been pushed to the limit of production for a single year; often not producing a calf for six months or a year after the test closed, and, in some instances, never. As one who helped to draw up the first set of rules for such yearly official tests, I plead guilty to not realizing the importance of incorporating some rule that would require the cow to produce a living calf within twelve to fifteen months of her previous calving.

The first great step with any dairyman in determining the value of his individual cows is taken when he begins to treat or deal with his herd as individuals, not as a whole. Then he will soon learn that he must needs own a scale and a milk record sheet; not only that, but a Babcock test as well; and not only these, but that he must use his mind, his pad and his pencil to study the individual cow, her feed requirements and other characteristics.

In fact, he must be more interested in the cows in his dairy herd than he is in anything else, except his family and his religion.—Part of an address given at the thirty-third annual meeting of the Iowa State Dairy Association, 1909.

SUGAR BEET POISONING.

It is probable California beet growing sections will never be troubled with stock being poisoned by eating frozen beet tops, but Colorado conditions may be of interest to California stock growers. The following account is sent us by B. F. Kaupp, pathologist of Colorado Agricultural College:

"After sugar beets are gathered it is the custom to turn live stock—horses, cattle and hogs—into the fields to feed on the abundance of beet tops. Care should be exercised in the use of these fields. The tops and beets of the field should not constitute the whole feed the animal receives. Grain and other feed should constitute a part of the ration. Horses or cattle should be turned onto the fields only part of the time each day. Very little trouble has been experienced this fall, for the weather has been quite warm. If the animal engorges the stomach with beets inflammation of the stomach and intestines may result and may prove fatal. Often flatulent colic is the result. There is a degeneration of the cells of the vital organs—the liver and the kidneys.

"The Colorado Agricultural College has investigated such losses among horses, cattle, hogs and sheep. In other years, where the winter sets in early and is severe, the beets and the beet tops freeze at night and thaw in the daytime. Under these conditions there is such chemical change as to make the food extremely poisonous, if eaten in large quantities, and the result has been the loss of thousands of dollars worth of live stock. Such fields should not be pastured, as it is extremely dangerous, and if loss does occur it will prove expensive feed."

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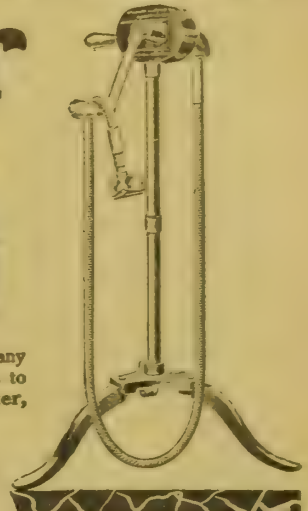

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Somewhat Personal in Tone

The many readers of The Cultivator will notice that the major portion of its columns is occupied this week with the detailed reports of three important State functions, all worthy of wide publicity because of wide practical interest. The first was the State Fruit Growers' Convention at Stockton, which was fraught with the important matter of standardization of fresh deciduous fruits; the menace of the Mediterranean fruit fly to our rural economy; the importance of better legislation for the regulation of horticultural quarantine; and the alien land law and farm labor question.

The second was the Fifth Annual Tulare County Citrus Fair, held at Visalia, which in extent and influence must be reckoned as the best one of the series, telling in tangible form of the development and exploitation of the great citrus industry of Central California during the past ten years. And the third was a well attended meeting of fruit growers at Claremont, called for the purpose of devising ways and means for the betterment of our horticultural commission service. Particulars of these are all to be found in this issue.

In this connection The Cultivator takes pride in felicitations to itself, because it was the only horticultural and agricultural paper in the State that had direct personal editorial representation at each of these meetings, thus placing itself in a strong position close to the soil in reflecting and giving the best thought of an enlightened rural economy. Verily, if you see it in The Cultivator, it's so.

Lessons of an Event

If there is one thing more than another that leads to failure in fruit culture, it is a want of thoroughness. With but few exceptions, none of us play the game to the last notch; somewhere along the line we lag, miss a cog, and the result is a loss of revenue in the final disposition of our product. These thoughts are forcibly brought to mind by the character and "get up" of some of the exhibits displayed at the late Tulare Citrus Fair. Oranges over and undersize, some faulty in form and peel, others so pulpy that they would float like cork when placed in water, many actually green not only in taste, but appearance. Other fruits were open to the same criticism. Now in a competitive exhibit of this kind it is a mere waste of time and money to enter imperfect fruit, because in the very nature of things it cannot win. Remember that the triumphs of the world go to the people who possess the "know how." If you want to win in the show room or the market place, be thorough—put up only the very best. If you are in doubt, get wise; if you don't know how, learn. That's what the other fellow is doing all the time.

Specialize--Standardize

The State Fruit Growers' Convention, held last week in Stockton, gave attention to specializing and standardizing, more particularly the latter. Still more particularly standardizing of green deciduous fruits was made prominent. The magnificent grading system of the citrus fruit growers was not touched upon, dried fruit, greatly in need of an uplift, was only brought up incidentally, though a letter was read from dried fruit buyers in Amsterdam and Rotterdam complaining because of losses of dealers in California fruits owing to inferior grade.

But the standardizing of green fruits called forth many papers and much discussion. It is Commissioner Jeffrey's hobby and he is consistent in his claim that it is useless to continue to produce more fruit if careless and indifferent methods of packing and marketing are to continue. So for more than a year his efforts have been along marketing lines. The first effort has been to standardize or grade the fruit so as to create confidence in it and ultimately better returns.

Last year's, '09, conditions were so disastrous to many growers, and largely so because of a mass of unfit fruit being dumped on the market, often under attractive exterior, that the commissioner's efforts found ready response and the work which started in Placer county spread till several counties joined the campaign, confidence in packs was restored and better returns came to growers. Naturally gratitude to the commissioner and determination to continue and enlarge the scope of standardization was expressed in the convention.

Thursday was especially given to standardization, but in every lull in the program some delegate would spring the discussion anew and urge to greater perfection.

A resolution was introduced urging legislation which should compel standardization, but this failed to secure support to carry. The delegates felt that the campaign of education should be continued till the merit of the system should compel its more general introduction.

What is Standardization

As one large handler of fruit expressed it, "This Standardization is simply another way of expressing common every day honesty." It is the putting up of fruit so that the claim on the outside of the package is made good on the inside. As Mr. De Motte of Tehama county expressed it: "We want our fruit to be put up as well as a keg of nails. What nail manufacturer would think of putting up nails in a keg marked 3-penny, place a few 3-pennys on the surface while underneath 20's, which are cheaper to manufacture, are substituted?" Morally the nail maker is perhaps no better, but he surely has a higher grade of commercial honesty than ninety-nine hundredths of California's fruit growers and shippers. The larger, firmer apples, berries or other fruits on the top while the less desirable are hidden below is a chronic condition which the pious producer never stops to question, the practice is so common.

Of course, there are degrees in this dishonesty. Some conscienceless rascals will do anything from "stove-piping" a barrel of apples to putting boulders in a sack of potatoes. Such common thieves we do not refer to. But the other fellow who drops in an occasional wormy or undersized peach while the surfacing layer is beautiful to look upon with large, fair fruit, does it with conscience free of offense "because everybody does it, don't you know," and thinks he is fooling the buyer. He has succeeded only in fooling himself and creating distrust which results in his own financial loss.

If "standardizing" will cause a return of common honesty and the square deal which in turn will bring prosperity it is a noble work and should receive heartiest support.

Nearly Nine Billions

The annual report of the Secretary of Agriculture gives a mass of figures reporting the agricultural industries of the country which are astounding. The farm products of the year aggregated a value of almost nine billion dollars, to be exact, $8,926,000,000. Taking the values of the products of 1899 as a basis, this year's would be represented by 189 or almost 100 per cent increase in eleven years.

The greatest one item in our productions is corn, which this year holds the record over 1906, up to this time the banner year. In bushels it amounted to 3,121,381,000. This one crop alone is estimated to be worth a billion and a half, sufficient to cancel the interest bearing debt of the United States. The secretary says regarding the productions of the last decade:

"During this period of unexampled agricultural production, a period of twelve years, during which the farmers of this country have steadily advanced in prosperity and wealth and in economic independence, in intelligence and a knowledge of agriculture, the total value of farm products is $79,000,000,000."

Home Packing

Much of the green deciduous fruit is put in crates in packing sheds in the orchard and hauled directly to the cars, and where standardizing is followed, inspected and sent to market. We believe this plan will ultimately be changed to packing in larger houses in a more central way. This is the only means by which uniformity can be obtained, and we believe better results will come to the grower when that plan is followed.

One mistake of those who discuss the advantages and disadvantages of giving more attention to agricultural matters in our school system is in claiming that agricultural education makes farmers or fruit growers. There may be technical schools where arts and trades are taught, but we do not believe our enthusiasm for carrying agricultural education into the public schools should lead us to believe for a moment that they will fit the children of rural districts to become farmers. The idea should be not to make it a trade teaching proposition but a training which leads to and not away from the farm. Elementary education cannot touch all points and specialize in them as much as some would wish. There is a limit to the capacity of the child—and teacher as well.

One speaker at the State Fruit Growers' Convention, while endorsing in a general way the standardization of fruits, complained because one of the finest cars of fruit he ever sent out brought far less money than indifferent, even cull, fruit which he shipped at a later date. No grower should let such an incident influence him in the least. We have seen windfall and cull oranges sent to market which brought the grower more than the finest fruit. This was simply one of the accidents of the fruit business, and proves nothing. It cannot be gainsaid that "putting the conscience in the box" can have any other influence than the best in bringing up California's reputation so as to secure the greatest returns.

The Imperial County Fair at El Centro is occupying the attention of agriculturists this week. It is being well attended, and the City of Los Angeles honors it by sending down a special excursion, which leaves the city this, Thursday, evening, putting in the entire day Friday at the fair.

Agricultural News Notes of the Pacific Coast

Northern California

The Forest Service is busy planting forest trees on areas devastated by recent fires in Glenn county.

A site has been selected and money subscribed for the erection of a creamery at Covelo, Mendocino county.

An exhibit of silk worms was one of the features of Butte county's exhibit at the United States Land and Irrigation Exposition.

Butte county's olive crop is proving much heavier than anticipated earlier in the season and the quality is reported unexcelled.

Voters of Sacramento have decided upon a $75,000 bond issue to aid in cutting the wider channel in the lower Sacramento.

Fruit growers of Sonoma county are pulling for the next State Fruit Growers' Convention to be held at Santa Rosa in 1911.

Growers of Windsor, Sonoma county, are firmly convinced of profits from prune trees. Many new orchards are now being planted.

Deciduous fruit shipments from Superior, California, the past season totaled 14,022 carloads, more than 1000 carloads lighter than last season.

The first car of oranges out of Oroville sold in the East at an average of $3.10 per box. The crop is rather lighter than usual, but the quality is the best ever.

An almond cracker is at work on several tons of almonds at Yuba City, Sutter county. The meats are to be shipped to San Francisco for the confectionery trade.

Healdsburg prune growers are elated over big demand for their prunes in the eastern markets. They are said to be of exceptionally fine quality this year.

The hop growers of Sacramento county are laying plans for the formation of an organization similar to the Almond Growers' Exchange to handle marketing and other mutual interests of members..

The Grand Jury of Yuba county for 1909-1910 has recommended that the present road ordinance be amended to allow 3500 pounds of freight hauled over country roads regardless of weight of wagon.

The Gravenstein Apple Show Association is planning the erection of a large new pavilion on the site of last year's apple show. The building will have a frontage of 125 feet and will be built in Mission style.

Over 1200 birds were entered for the poultry show at Petaluma last week. Entries were made from all over the state, an unusually large number coming from the southern counties of San Diego and Los Angeles.

In addition to the citrus fair held in connection with the Convention of Western Fruit Jobbers at Sacramento in February, it has been decided to display apples produced in counties of Superior California. An attempt is also being made to arrange with local vegetable shippers for exhibits of celery, asparagus and other produce shipped in carload lots.

Central California

Exeter, Tulare county, shipped during the month of November 460 cars of oranges.

Lindsay, Tulare county, estimates its navel shipments for this season at 1100 cars.

Thousands of young nursery stock are being rebudded in citrus nurseries of Tulare and Fresno counties.

Creamery operators of Porterville, Tulare county, have joined in the fight against the proposed repeal of tax on oleomargarine.

The Santa Clara County Poultry Association is investigating the reports that chicken feed is being made from carcases of diseased horses.

Conditions in the raisin market are reported to be improving. Prices bid on muscats have gone up to 2¾ cents, but growers are holding out for 3 cents.

On California Day at the Chicago Land Show 12,000 loaves of raisin bread were given away, together with 10,000 cartons of seeded raisins and 2000 oranges.

An interesting and well attended farmers' institute was held last week at Turlock, Stanislaus county, under the direction of the State College of Agriculture.

A fine exhibit of Santa Clara county's products has just been installed in the rooms of the California Development Board in the Ferry building at San Francisco.

The Fresno Canal and Irrigation Company is constructing a large wasteway canal in Section Nine. This is to prevent damage from flooding during the rainy season.

An irrigator near Porterville, not satisfied with his thirty inches flow from an artesian well, shot it with dynamite and this resulted in the loss of all of his water.

The citrus fruit exhibit of Fresno county at the United States Land and Irrigation Exposition in Chicago is to be permanently installed in that city by the colonization agent of the Santa Fe.

Lindsay citrus growers are excited over the appearance of purple scale on Louisiana oranges which have been brought into that city by a tourist. Every possible effort is being made to prevent its escape to the citrus orchards.

Horticultural Commissioner Schell of Fresno county reports nursery trees, citrus and deciduous, in exceptionally healthy condition. Damage from thrips is also reported less than in previous years.

The big new bridge across the Pajaro connecting Santa Cruz and San Benito counties is expected to be completed before the heavy rains commence. It will be a great convenience to farmers east of the river.

The death is reported of Major Chas. P. Braslan, head of one of the great seed growing houses of the state. The firm which he has built up cultivates thousands of acres in the Santa Clara Valley and various coast sections and employs thousands of laborers. The immense output of seeds is marketed all over the world.

Southern California

Sierra Madre, Los Angeles county, is preparing for an elaborate flower show in the spring.

Orange county claims three crops producing a million a year each, beets, oranges and beans.

The Fillmore, Ventura county, packinghouse has been sending out its choicest lemons for the Christmas trade.

Ranchers of Riverside county report sufficient precipitation to put ground in excellent condition for plowing and grain is being seeded.

The settlers of Palo Verde Valley in eastern Riverside county are trying to arrange an irrigation district under the Bridgford Act.

Dwarf milo has some enthusiastic friends near Holtville in the Imperial valley. Its yield is said to double that of the ordinary variety.

The first commercial shipment of oranges grown below sea level was made from Mecca, Riverside county. 468 boxes were shipped to the New York markets.

The first week of orange shipments in the Redlands district this season broke all records. 62 cars were sent out as against four for the corresponding week last year.

The first season's trial of growing Armenian tobacco on lands at Yorba, Orange county, has resulted most satisfactorily and those interested are planning a great future industry.

Many pickers from Texas have arrived in the cotton fields near El Centro, Imperial county, so that there is now no scarcity of labor. Picking will continue for at least two months longer.

Coachella fig growers have begun shipping their winter crop to the Los Angeles markets. These figs are of the black San Pedro variety which produce spring, summer and winter crops in this valley.

The creamery in San Pasqual Valley, San Diego county, is arranging to test the milk of each cow in the valley every month. It is hoped that this will bring up the standard of the herds.

Starting its run on sugar beets on July 23rd, the Chino Beet Sugar Factory closed on the 17th with a run of 88,800 tons, or an average of about 800 tons a day. The total production was about 30,000,000 pounds.

Considerable interest is being manifested in Southern California in the shipping of oranges by way of Panama Canal. It is expected this will be of greater value to the lemon industry than to the orange business.

The packing house of the San Dimas Orange Growers' Association, one of the finest in the state, was burned to the ground last week. Its destruction entailed a loss of $50,000 and 200 employes were thrown out of work.

The Orange County Dried Fruit Association, which organized this last season, has been so successful in handling fruit of its members that it has decided to build and equip a packing house in Santa Ana. The association still has on hand about 100 tons of apricots.

The Coast

Whitman county, Washington, Farmers' Union, is demanding a state grain inspector and weighmaster on the Coast.

Plantings made in various parts of the Philippine Islands show that rubber can be profitably raised to a much greater extent.

Oregon's hop crop this year is estimated at 92,000 bales, according to computation made by hop dealers in session at Salem.

Ranchers of White Bluffs have established a free public library and reading room, the first maintained by farmers in the Northwest.

The quality of the 1910 hop crop in Oregon has been far superior to that of 1909 and the picking is reported cleaner than for many years.

Colorado's governor has issued a call for the first annual convention of the American Apple Congress to be held in Denver, December 15-17.

The breaking up of a buyers' combine at Pullman, Washington, advanced the purchasing price of wheat ten cents in one day last week.

Walla Walla, Washington, currant growers report ridding their fruit of worms by spraying with arsenate of lead after blossoms have dropped.

Directors of the Asotin County Poultry Association are making arrangements for a big show to be held in Clarkston, Wash., January 23-29.

Large shipments of grain are being made from Grangeville, Idaho, at $14 per ton. Many of the farmers, however, are holding for better spring prices.

Official notice from Washington says that 20,000 acres under the Tieton project will be irrigated next year and the remaining 14,000 acres in 1912.

The snow storm which swept the Rogue River valley on Thanksgiving felled a peach tree planted in 1837. Although old and scraggy it bore heavy crops each year.

Hop growers of the Coast and Middle Western States are in sympathy with the movement started by Sacramento county growers for the formation of a selling association.

The University of Arizona recommends experimenting with Smyrna figs in many of the warmer valleys, and thinks they will be a great factor in the productions of that state.

Hazelwood Farm, Spokane, claims the record producing cow west of the Mississippi river. The cow's name is Bracelet Baker of Hazelwood and she produced 29.7 pounds of butter in seven days.

County Horticultural Inspector of Okanogan county, Washington, says that as result of conscientious spraying of fruit trees during the last two years there is practically no wormy fruit in the county.

The apple crop of Wenatchee, Washington, has all been shipped, the total being 1850 cars. Of this 500 cars were summer apples and the balance fall and winter. The aggregate value of the output was about a million and a half dollars.

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If you were going to erect a large building, you would consult an architect—if you wanted some legal papers drawn up, you would go to a lawyer—because these men have made a special study of their respective professions.

The same principle applies to the feeding of your chickens. Presumably you have not the machinery or formula for making an egg food so that it will be just what your hens need.

That's why you should buy COULSON'S EGG FOOD. It is the result of years of study—it is scientifically mixed by experts with the right proportions of the various ingredients to give a balanced ration.

COULSON'S EGG FOOD means a healthy stock, with great laying powers and eggs of quality. Saves you the time of mixing—provides a better feed—makes more eggs—means more profit, as COULSON'S EGG FOOD more than pays for itself, through making hens lay to their full capacity.

It is especially advantageous to use it at the present time, when the price of eggs is beginning to increase, and when also you are anxious to have your hens in good condition for the molting season.

Hens eat only what they like, but there are many foods they must have, and which must be mixed with their regular food so that they get the desired quantity. The only way the food can be mixed is by improved machinery—that's why you should feed COULSON'S EGG FOOD.

Get it at your dealer's; anyway send for our Catalog which tells about the famous Coulson products and gives valuable information about Poultry Raising.

Coulson Poultry & Stock Food Co., Petaluma
Germain Seed & Plant Co.,
Distributing Agents for California

The worst thing we have to contend with in getting new customers to try

West Coast Egg Food

is the "stuffs" that have been put on the market called "egg foods," largely composed of unsound grains, mill refuse, and cheap, very cheap, Japanese rice bran and such offal. When we once get a trial of "West Coast" we have no further trouble. No such stuffs in ours. We are winning out in great shape by making first-class feeds at prices as low as those "cheap" ones. Try "West Coast" just once. 75-lb. sack only $1.80, or $45.00 per ton. If not sold by your dealer, send to us. Or, if you are distant from Los Angeles and have good grain products cheaper than to ship them in, you can make your own Egg Food as good as anybody's.

Egg-More Booklet

tells you how. It is free. Send for it. Send us addresses of 5 persons in your vicinity who have fowls, and we will send you an Anchor Egg Separator.

West Coast Mill

Office and Salesrooms, 115 Winston St.
Los Angeles, California

MORE CHICKENS—MORE EGGS AND MORE PROFITS

Big demand for poultry products at top notch prices—makes the chicken business *better than ever*. Go into it *right*. Pacific Coast poultrymen testify that

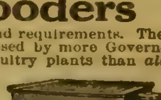
Cyphers Incubators and Brooders

the World's Standard Hatchers, give the *best results* in meeting Coast conditions and requirements. The Cyphers is a genuine non moisture incubator; self-regulating, self-ventilating. It is used by more Government Experiment Stations, by more poultry fanciers and on more big and successful poultry plants than *all other makes of incubators combined.*

The Cyphers Is Particularly Adapted to the Pacific Coast Climate

You can rely upon the results from the Cyphers—*hatch after hatch.* Mr. C. Flewelling of Petaluma, Cal. uses 14 Cyphers and averages 75% of the total number of eggs set. Bertha M. Story of Oregon City, Ore. says "I rarely have less than a 90% hatch of good strong chicks." Cyphers Incubators and Brooders are fireproof and insurable. We guarantee Cyphers Incubators and Brooders absolutely and are right here on the coast to back our guarantee. Write today for our big handsome book: "Practical Poultry Raising" and 1911 catalog of Cyphers Incubators, Brooders and Poultry Supplies.

Cyphers Incubator Company, Dept. 46, Los Angeles, Cal. Also Buffalo, N.Y.



Practical Poultry Culture

POINTS ON RAISING GEESE.

Geese are probably the hardiest of all domestic fowls. They require less attention, and little or no outlay for buildings. The two great objections to geese are the noise they make and the fact that they almost spoil a pasture for other stock. Cattle or sheep do not like to graze after geese have gone over the grass. Yet there should be a place for them on many more farms than now keep them. Under the right conditions, geese give better returns than most other farm poultry, but if you do not understand their nature and do not know how to care for them, they are often the least profitable.

By nature geese are more like cattle in habit of feeding than like poultry. They are essentially grazing animals, and too much grain will spoil them. Pure air is even of more importance to geese than to cattle. They will not thrive if shut up in buildings. If you have not a good pasture, do not try to keep geese, or at least to raise many goslings. They can be kept in yards, if fed an abundance of fodder corn, green rape, clover or other succulent feed; but this adds greatly to the expense of raising them.

While green pasture is very important for maintaining the old geese, it is indispensable food for young goslings. They must have fresh, tender grass in abundance at all times during the day, from the first day they eat to the time they are feathered and have grown their wings. After that, those intended for market may be penned and fed green stuff and grain, but those intended for breeding should continue to have the pasture and free range. If a large flock is raised, quite a large pasture is needed to sustain them.

It takes geese almost as long to attain full development as it does cattle or sheep, but they remain profitable for many years. Yearling geese are very poor breeders; two-year-olds are better; and they only reach their best at three years of age. If one wishes to make a start in breeding geese, the best plan is to buy breeding stock early in the fall. They must not only become accustomed to their new quarters, but to each other, for geese do not mate readily, and if put together after January 1 will often fail to breed that year. Old, well-mated geese of the highest quality are the cheapest and most profitable to buy. The best way, however, to get a start with young geese is to order them before they are hatched. Have the large, early-hatched speciments selected for you and delivered early in the fall. They must be kept at least one year without much profit, and two years before they do their best, but in this way one knows the age of the flock, and in the end will be likely to get much better results.

Two geese are usually sufficient for one gander, and they often do better in pairs during the breeding season. The breeding season begins usually about February 1, but sometimes one will begin to lay as early as December, then stop, and begin again in February. They usually lay from fifteen to twenty eggs before becoming broody. As soon as they show an inclination to sit they should be removed, placed in a box for a few days, with water for drink, but given no food. After this, put them back in the yard again, and they will soon commence laying.

One gander will drive all others out of the pen, if they can get out, or injure them quite severely if they cannot get out of the way. Leave one or two geese with the boss gander, and remove the others to another pen, and in the same way continue to single out pairs or trios until you have them all separated. This is for the starting year. After they are separated, put leg bands on them and record the same for future reference. It is difficult sometimes to distinguish the young from the old in the fall, and the use of the leg band is the only sure way out of the difficulty. Holes may be punched in the web of the foot, but they will grow up after a while, and the scar can hardly be seen.

I have raised geese a good many years, and always had plenty of pasture for my young stock and breeders, and always pen those that are intended for the market, and have found that they add considerable to the income each year.—Mrs. R. B. Rushing, in Country Gentleman.

THE RIGHT KIND OF STOCK.

At no time of year may cockerels to furnish new blood for next spring's hatching be bought so cheaply as now. Too many who intend to introduce new blood put off the purchase of the birds until near the breeding season. Then, because they must pay $2 each, they conclude to use their own, thus keeping up the inbreeding.

Put yourself in the position of the man who has the cockerels to sell, and see what you would do.

There is nearly as much profit in a cockerel sold now for $1 to $1.50 as there is if kept till March and sold for $1 each more, for lusty growing cockerels are good feeders, but you might as well feed what you need as to feed your own that have been inbred too long already.

Fanciers tell us that inbreeding will not result in the deterioration of your flock. Do not believe this. Where a flock is forced for heavy egg production, you need all the stamina you can get.

The fancier works for eggs during the hatching season, then lets the hens rest. Any hen, with any amount of inbreeding, ought to lay during March, April and May without showing any ill effects, but it is forced laying during cold weather that tells the story.

We who are looking for a good profit from eggs and poultry need an outcross from good vigorous stock each year, else the size of the stock and ability to lay the year through will suffer.

The time is not far off when more attention is going to be paid to building up utility flocks, and cockerels from these flocks will be in demand among utility breeders at profitable prices.

The sooner many such flocks are started, the better. Particular attention should be given to shape in the birds which are to form the foundation for such a flock. I believe firmly that the hen that is most profitalbe for poultry is most profitable as an egg producer.

We want the hen with a long body, very full breasted, which indicates large feeding capacity, and long on the keel and full behind; in other words, almost a rectangular figure. This gives, also, plenty of breast meat.

I like the quite low down hen with legs well apart. This indicates constitutional vigor. Cockerels from such stock mature into meaty broilers and roasters at an early age.

If you have heretofore bred mongrels, get some purebred birds now, of the breed you like, and continue their use a few years, getting good, vigorous, new blood each year, and note the improvement in uniformity of stock and eggs.

Farmers are awakening to the fact that a flock of good young hens is one of his most profitable sources of income.—American Cultivator.

POULTRY NOTES.

A bulletin recently issued by the Maine Agricultural Experiment Station (Bulletin 179) deals with some of the results of the poultry work carried out at that Station during the last year. The first topic treated in this bulletin is: Feeds and methods of feeding. In this section are given the formulas for a new method for feeding laying pullets for egg production. The old "dry mash feed" of the Maine Station so widely used throughout the country has been somewhat modified in the light of experimental work. Full directions for compounding the new feed are given in the bulletin. In this same connection the method of feeding breeding stock in use at the Station is described. The purpose of this special method of feeding the breeders is to gain greater fertility and hatching quality in the eggs. The problem of securing a cheap and satisfactory green food for poultry in the winter months is an important one for all practical poultrymen. The Experiment Station has been, for some time past, using green sprouted oats as a source of winter green food with highly satisfactory results. In this bulletin is described the method by which the oats are sprouted and grown at the Station plant.

A short section in the bulletin deals with the subject of keeping poultry free from lice, describing the lice powder and the lice paint which is used at the Station. Another section gives an account of the method of making the cresol disinfecting solution used for keeping poultry houses, fixtures, incubators, brooders, etc., free of vermin and for general disinfecting purposes.

Besides this practical material on poultry management the bulletin includes a long section entitled "Studies on Hybrid Poultry" in which an account is given of the experiments in progress at the Station which have as their aim to combine, if possible, desirable meat and table qualities with good egg laying ability in the same strain of poultry. By the application of modern methods of breeding the attempt is being made to develop a new race of poultry which shall be more desirable than now available.

The final section of the bulletin gives a brief abstract of some of the results of the studies on poultry biology of a more technical character which have been completed during the past year.

Copies of Bulletin 179, Poultry Notes, may be obtained on application to Director Chas. D. Woods, Maine Experiment Station, Orono, Maine.

THE FORERUNNER OF ROUP.

Look well to the condition of the coops, if the young chicks still roost in the small coops they were put out in, and they do, on most farms, roost there until sold, or they instinctively betake themselves to nearby trees, where the sanitary conditions are better. If there is not plenty of room for them to "spread out" in the coops, better remove them to larger quarters. If not possible to move them, at least divide them up so that they have room, and then see to it that the coops are kept clean and free from vermin.

Right here, in overcrowded coops, is where many an epidemic of roup and canker begins. The respiratory organs are weakened—yes, the whole constitution is weakened by breathing the air in overcrowded coops; air loaded not only with the impurities cast off by the lungs and bodies, but with the ammoniacal fumes arising from the accumulated excrement on the floors. As the cooler nights come, the

To the Poultry Raisers:

Do you want sick, mopey chickens, or do you want strong, healthy ones? Above are the kind of healthy chickens found on a ranch where Merval is used. Why not give your chickens Merval and have strong, healthy birds like these?

Merval will cure Roup in a week, and other diseases such as Canker, Chicken Pox and Diarrhoea in ten days.

Merval is also a fine tonic for run down hens. It puts them into condition again, which means more eggs.

Get a can from your dealer today. If he does not sell Merval, send us one dollar and we will forward you a one-pound can, postage paid.

Do it now. Remember, Merval won't cure dead birds.

Agents—C. H. Werdig, Sebastopol; Geo. P. McNear, Petaluma; Riverside Poultry Co., Riverside; J. A. Reinhart, Hollister; H. W. Thielsen, Oregon; A. W. Huskins, 713 Waterloo St., Los Angeles.

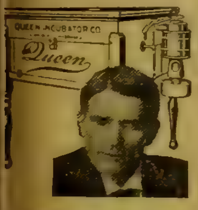
Merval Manufacturing Syndicate
245 Drumm St.,
San Francisco, Cal.

"Chicks well hatched are half raised"

CHICKS

White and Brown Leghorns
Orders booked for future delivery
San Jose Hatchery
Henry Langenschwadt *SAN JOSE, CAL.*

The Arenberg Brooder Stove
Proven to be the most successful Brooder Stove on the market. Awarded gold medal for most Meritorious California invention at California State Fair, Sacramento, September, 1910. Burns distillate, perfectly simple and easy to manage. Write for details. **H. F. ARENBERG, Petaluma, Cal**



Go In and Make Money

Poultry offers the surest, easiest way of anything that's open to you. Don't waste *all* your time considering. Go in and *make* it win.

I have started over 61,000 people the Queen Incubator Way. May I do the same for you? Get my offer on

The 1911 Queen Incubator

The incubator that makes money for poultry raisers. Take one and *try it* for 60, 90 or more days and prove for yourself that it is the hatcher I claim it to be. I take all the chances. I *pay the freight*, too, and give a 10 year guarantee now. It is my way of showing people what they can accomplish with Queens.

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The New Queen Poultry Guide and Catalog is larger and finer this year than ever. It tells how to make money with poultry and how to get a Queen Incubator on the most generous terms ever offered. Let me send you my great book to tell you about Queens and Success. An infallible guide; no other book like it. *Free and postpaid.* Address

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The Rural Californian, the leading monthly, $.50 the year.
The California Cultivator, the leading weekly, $1.00 the year.
Both one year for $1.50.

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My big 1911 book has hundreds of photos. Every page a poultry sermon. Write postal to
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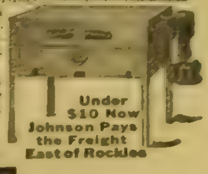

Coulson's
MADE IN PETALUMA
Special Chick Food

The chick that dies is a loss. The chick that lives is a source of profit

Coulson's Special Chick Food

is the greatest life-saver known in the chicken industry. It makes weak chicks strong and healthy chicks even more vigorous. It costs less than 2c a chick to feed COULSON'S SPECIAL CHICK FOOD for four weeks. Don't experiment but buy the feed which has given years of satisfaction. After six weeks change to

Coulson's Growing Chick Food

It keeps the chicks healthy—makes them develop fast and brings them quickly to the point of profit-paying. If your dealer can't supply you with COULSON'S CHICK FOODS write us. Any way write for the free book "Poultry Feeding for Profit."

Remember our trade mark on every sack

Coulson Co.
PETALUMA, CAL.

We are So. California Agents for
COULSON'S
SPECIAL CHICK FOOD
Germain Seed & Plant Co.
326-330 So. Main St. Los Angeles, Cal.

This open front door makes perfect ventilation

Mandy Lee is Miles Ahead

It is the only Incubator without a "Sealed," Air-tight Egg Chamber. It supplies the life-giving oxygen freely, draws off the carbonic acid gas, and is saving the lives of millions of chicks.

READ the story of the Mandy Lee triumph in our new catalog. Other incubators are already preparing to imitate and profit by our great discovery.

No guessing with a Mandy Lee

You cannot afford to buy an old-theory incubator which may go out of date and be discarded next year. You should know the truth *now* about the great discovery. The book is free. Ask for it.

There IS Something New in Incubators

We have taken the boldest and most important step ever taken in incubator building. See the openings into the egg chamber? They mean the saving of chicks' lives. It is the key to *right* hatching. Ventilation in the Mandy Lee is now perfect. It goes on all the time, neither above nor below, but right *at the eggs*. Every minute of the hatch the life-giving oxygen is freely passing in to the eggs and the carbonic-acid gas is passing out. And correct ventilation is just one of the great Mandy Lee features.

We Don't Guess—We Measure

The Mandy Lee is as far in advance of other incubators in heat and moisture as it is in ventilation. We do not guess at anything. The sensitive regulator controls heat to the fraction of a degree and *we measure moisture* just as accurately with the Mandy Lee Hygrometer (one sent with every incubator). You know what you are doing. *You* measure and control moisture; *you* control the hatch. The Mandy Lee is the all-season, all climate, all condition hatcher, always producing the most and the strongest chicks.

Mandy Lee Brooders give direct contact heat to the backs of the chicks. That is *real* mothering, the most important thing in poultry. Hovers are raised and lowered as weather gets warmer or cooler—heated from end to end. Chicks do not pile up and smother. Write to-day for catalog and full information.

NEW OUTDOOR BROODER
Heated—Storm-proof

GEO. H. LEE CO., LOS ANGELES, CALIF.
225 West Second St.

chickens go out in the early morning, sweaty perhaps from the close contact in the coops, and a decidedly chilly atmosphere, and by and by there are catarrhal symptoms, if no worse, and the fowls fail to develop as they should. Small wonder that they are not doing well. The wonder is that so many live through such conditions, which are not at all unusual.

Overcrowding in coops, and in houses later, is the most prolific source of disease, and the key to the poor results often reported. Plenty of fresh air they must have, if fowls are to do their best in any way; even the food they eat, important as we think it, is not of so great importance as fresh air, for hens will give excellent returns on almost any variety of food if sanitary conditions are right, while no amount of food or "balanced rations" will counteract the effect of impure air and vermin.—Green's Fruit News.

THE PETALUMA SHOW.

Petaluma shows her great resources once a year. It is an exhibit worth going miles to see, for the aristocracy and utility of featherdom blend in harmony to produce a sight to delight the eye of the fancy and business poultryman. At no other show is there so much to be seen and admired. All breeds and nationalities, all shades of color, all sizes are assembled. A magnificent male chorus keeps constantly sounding the praises of the Empire of Poultry. Petaluma surpasses all other cities of the world in the production of hens and their fruit. This city last year sent out more than 7,000,000 dozen eggs and 120,000 dozen chickens for the market. The soil is particularly well adapted to poultry, and transportation facilities make it exceedingly inexpensive to reach San Francisco, where most of the shipments are sent.

While Petaluma is primarily the home of the White Leghorn, she does not confine her exhibit to this type alone. Neither does she restrict herself to her immediate locality, but with an open-hearted spirit she invites friendly competition from whatever source the best birds may be drawn. It is this generosity to outside interests that has strengthened the position of Petaluma. It has shown the necessity of constant improvement to keep ahead of her numerous rivals.

The exhibit speaks volumes for the poultry industry of California. The great hall known as "Dreamland" was beautifully decorated with vari-colored flags and ribbons. Magnificent in its festive dress, the place afforded a delightful setting for the feathered display.

They were all there; chickens, geese, ducks, turkeys and pigeons. The total number of entries was 1,218. The largest showings were those of Buff Orpingtons, Rhode Island Reds, Barred Plymouth Rocks and White Leghorns. Imported Faverolles were shown in exceptionally large numbers by Jack Lee, of Petaluma.

Mr. Charles McClave, of New London, Ohio, was the judge, and his awards gave general satisfaction. He was careful and conscientious in his work. The best individual winning was made by Mr. Scrutton, manager of the Coulson Poultry and Stock Food Company. He had ten entries, and secured five first prizes, all the firsts in their respective classes. Mr. Scrutton is a great believer in proper food for best results, and his winnings show the quality of food produced at his company's mills.

We have praised the properties of charcoal before but too much cannot be said in its favor or in urging its genral use in the poultry house, says the Kansas Farmer. The poultryman who keeps charcoal always before his fowls will save himself a great deal of trouble, provided he follows proper methods in other directions. Charcoal has the power of absorbing large quantities of gases and neutralizing their effects. When fowls are given access to crushed charcoal they will eat large quantities of it and this not only absorbs and neutralizes noxious gases in their stomachs, but it seems to have beneficial effects in other directions. In most towns crushed charcoal can be bought and most supply houses and dealers keep it on hand, but in the event that these sources of supply are not available, it is quite easy to make a supply of charcoal for home use. Where corn is grown a good charcoal may be made from corncobs. Pile up dry cobs and set them on fire and when they are a glowing mass of coal extinguish the fire with water, or better, cover the pile with earth until the fire is smothered and let the cobs cool down. A very good substitute for charcoal is parched corn, which has been kept over the fire until it is thoroughly charred. The hens may not eat this readily at first but after they have become accustomed to it they will eat it greedily.

LINE BREEDING.

Here is a concise statement of what is meant by line breeding. "Line breeding is the best method you can follow to start a strain," says the Nebraska Farmer. "It may be described as selecting a male and female that are as near ideal as you can get hold of, and mating them. The following season mate the sire to the best one of his daughters, mating the original dam to one of the best cockerels of the first year's mating. The third season you breed together two birds of the second season's mating, one from each side, and you thus have 50 per cent of the original blood of both birds on each side, and still do not mate brother and sister."

Frank V. List, representing the Pacific Oil Mills of Seattle, has been in Los Angeles the last few days, and has succeeded in placing "Proteina" Soy Bean Oil Meal with the Germain Seed Company and Henry Albers. "Proteina" is a new feed on this coast, but has been fed in Europe for many years, last year 600,000 tons being exported from Manchuria to Denmark and England. The agricultural department, Bulletin No. 372, makes the remarkable statement that a bushel of Soy Beans is equal in feeding value to two bushels of corn. Prof. Jaffa, of Berkeley, and Prof. Thatcher, of Pullman, Wash., agree that "Proteina" Soy Bean Oil Meal contains between 45 and 46 per cent protein and less than 10 per cent fat. These figures will appeal at once to all scientific poultry feeders and dairymen. "Proteina" has been tested on this coast for the last twelve months, and the leading dairymen in the Northwest are using it, and have found it much better than linseed oil cake meal, being half as rich again in protein as the oil cake. We are predicting a large sale of this feed in California.

It has been conclusively proven that hens kept in a yard and fed right will lay more eggs than hens that run at large all over creation. The feed bill will not be so large either, a fact that is worth considering.

Rancho Mirasol White Leghorns
Eggs for Hatching, January to June. Day Old Chicks, March to June.
PASADENA, CALIFORNIA.

All Metal Incubators and Brooders
SIMPLE — SAFE — DURABLE
The result of 25 years experience, and the most Practical Incubator made.
Cycle Hatchers $6.50, Brooder Hatchers $8.50
FIRELESS BROODERS THE KIND THAT RAISE THE CHICKS
THE PHILO SYSTEM
Philo System Book and Poultry Review (one year) $1.00.
READ WHAT OTHERS SAY:
117 Miles Ave., Oakland, Cal., Nov. 12, 1910.
CYCLE HATCHER Co., Oakland, Cal.
Gentlemen: A year ago we started with the Philo System, and raised as fine a lot of White Orpington pullets as anyone would wish to see. The two machines we purchased of you last season have given excellent satisfaction. We shall probably need more this year, and shall use the CYCLE machines in preference to a large incubator. Yours truly, S. N. HAINES.
Send for "Poultry Profits." Mailed on request.
CYCLE HATCHER CO., - - - OAKLAND, CAL.
Warehouse at Los Angeles, Cal. Address all correspondence to Oakland.

FRANK J. IRONMONGER
RELIANCE BROODERS $6.50
The Home Life Saving Station for Baby Chicks. Easy to clean, and they raise every chick. Complete and ready for the chicks, F. O. B. Los Angeles
POULTRY BREEDERS' SUPPLY HOUSE
845 SO. SPRING STREET, LOS ANGELES, CAL.
FRANK J. IRONMONGER

Mammoth Bronze Turkeys.
Large bone, long body, full breasted, well marked, early maturing stock from the best prize winning Eastern strains. Toms and hens for sale. Prices right.
GEO. A. SMITH, CORCORAN, CAL.

PROTEINA
46% PROTEIN
10% FAT
One of the largest poultry raisers claims a 50% increased egg yield in one week after feeding Proteina with bran.
Write for quotations.
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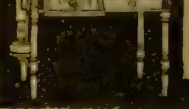

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Write for our Free Catalogue. It is interesting.
We pay freight.
Petaluma Incubator Company
Box 10 Petaluma, Cal., or
Box 10 Indianapolis, Ind.

Fertile eggs for hatching. Choice varieties. White Rocks, White Wyandottes and White Orpingtons at $1.50 to $4.00 per setting; $6.50 to $10.00 a hundred. Ducks—White Muscovy, Dark Muscovy, White Indian Runner, White Pekin, Buff and White Orpington, $1.00 to $3.00 a setting; $5.00 to $12.00 per hundred. Send for Circular. Pheasants' eggs in season.
WICK'S WHITE FOWL FARM
Moorpark, California

BABY CHICKS
Hatched from heavy laying stock of S. C. White Leghorn hens that have made Petaluma famous. Also baby chicks from selected S. C. Black Minorcas, Barred Plymouth Rocks and Rhode Island Reds. Send for price list.
Western Hatchery. Petaluma, Cal.
Fred Dye and J. L. Fredricks, Props.

WINSLOWS REDS EXCEL Single Comb RHODE ISLAND REDS Monrovia Cal RED FEATHER POULTRY YARDS
WINSLOW'S REDS
Bargains in Cockerels and Pullets bred from prolific winter layers.
DR. CHAS. E. WINSLOW Proprietor
Bx.368 Cor. Charlotte & Greystone
Monrovia, Cal.

WINTERS' WHITE INDIAN RUNNERS
The world's greatest egg producers. First, California State Fair, 1909. First, display pen; first, breeding pen; first, drake; first, duck and second, duck, at the Los Angeles show, 1910. Eggs for hatching.
WHITE AND BARRED ROCKS AND WHITE MINORCAS.
Eggs for sale in season.
C. O. WINTERS, 5307 Washington Ave., Los Angeles, Cal.
Phone, Sunset East 1197.

Barred Rocks a Specialty
Eggs for hatching from the well-known Hawkins Strain of B. P. R. best matings, $2.50 per 15. Utility stock $1.50 per 15.
ENOCH CREWS
Fairmount Ave. SANTA CRUZ, CAL.

(Continued from Page 603.)

subject of standardization of fruits. He stated that most emphatically the only way the fruit grower could secure greatest results was by creating a belief that his package contained an absolutely honest pack. Asked as to the comparison of Pacific Coast apples with the best apples produced in the East, Mr. Van Dieman said that he had seen as fine apples grown on the coast as any ever grown in the East, and he thought that with care in selecting varieties, and greater care in packing, that California and all the coast has a great future as an apple producer. While urging Californians to put up a more honest pack of apples he admitted that this state was in advance of New York methods, many packers there assuming that if facing layers on both ends of the barrel were satisfactory everything else in the barrel might go.

Resolutions.

Of course resolutions were passed fully endorsing the standardization movement which expressed the hope that greater extension of the plan would result from the first year's experience. Commissioner Jeffrey's efforts along the line of standardization were heartily commended. Agricultural education in schools was urged that it might develop the best in our state and nation and encourage the industry which is the foundation of all commerce. In addition it was urged that the state provide the necessary amount for the training of teachers along these lines. Another resolution which had fullest support recommended that the state make a greater appropriation that quarantine measures might be more effectively carried out. Another called for the appointment of a committee of five to consider methods of marketing fresh fruits in the East. Still another asked the enactment of a law restricting occupancy and ownership of land in this state to citizens who are freeholders and home builders. The committee of five was appointed by another resolution to have charge of legislative matters.

COUNTY OR DISTRICT FAIRS.

A number of representatives of counties in the Sacramento and San Joaquin Valleys met in Stockton last week and discussed the renewal of appropriations from the state for district fairs. Until the administration of Governor Budd the state made an allowance of $1500 a year for each of the various district fairs. Some of these had degenerated until they were merely horse trots and often were held simply to secure the appropriation from the state. The Fresno delegate stated in the meeting that the last Fresno fair which received the appropriation was held simply to pull down the $3,000 which was due to the district for the fair of that year and the preceding year when the fair was not held.

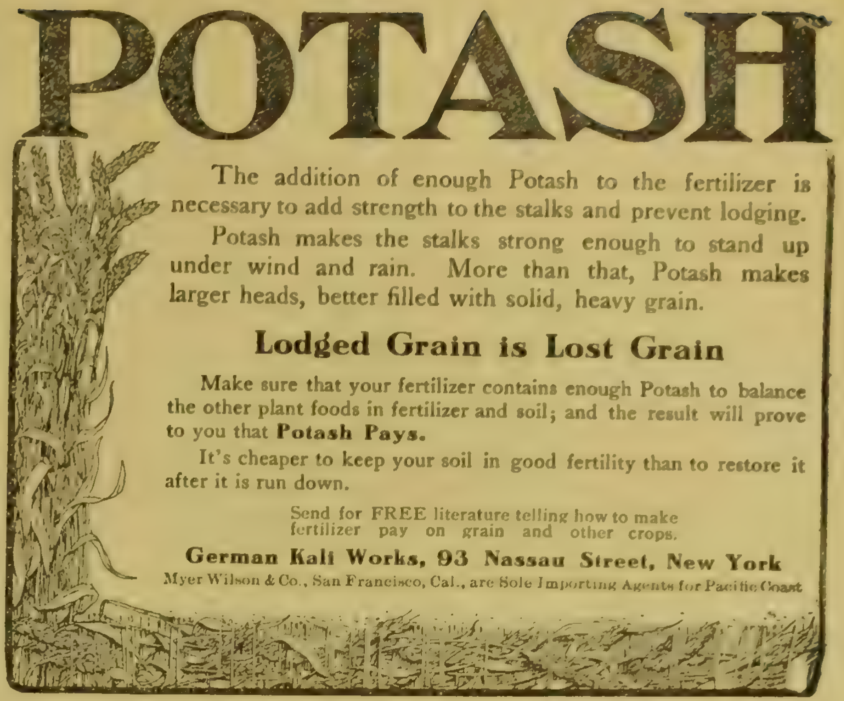
The meeting was called to order by Mr. J. M. Eddy, Secretary of the Stockton Chamber of Commerce, and President of the organization which has been formed to promote the district fair movement. There was a representative attendance from as far south as Tulare and from the northern end of the Sacramento Valley. Diverse opinions were expressed as to whether the fair should be a renewal of the old district fair or one held in each county. The general judgment seemed to be that with California's fifty-seven counties an appropriation for each would be too heavy a drain on the treasury. Some of the wealthier and larger counties were inclined to find the county plan more desirable, and the discussions resulted in no definite recommendation being made. The whole plan of work and the securing of proper legislation was referred to the executive committee, which will hold another meeting in Stockton in a short time, when it is expected that committees will be appointed to present the matter in the state legislature.

It was gratifying to note that the general sentiment was in favor of an agricultural fair rather than a vaudeville entertainment which has been the general plan of county and state fairs in many sections of the East and to a certain extent in this state. Mr. W. J. Kenney of the California Harness, Horse and Breeders' Association presented a statement from Governor-elect Johnson, in which he said: "I favor a properly conducted state fair and a limited number of district agricultural fairs, and believe in their proper encouragement and support by the state. If elected Governor I would favor and sign a bill appropriating money for district fairs and will insist that they be conducted in such manner as to make them of educational value in bringing out the best products of the state."

A LIVE HORTICULTURAL CLUB.

There are so many farmers clubs, granges and other local organizations in California that the Cultivator cannot keep in closest touch with all. But one of them held a meeting on last Saturday which was of enough importance, not only locally but in a state way, to be referred to at some length. This was the regular monthly meeting of the Claremont Horticultural Club at the home of Prof. A. J. Cook. There are only 35 members of the club but the attendance usually runs from 60 to 80. There were over 80 present on this occasion. The special discussion was on legislative matters. Some of the most important legislative acts pertaining to agriculture in this state have had their inception in this club. Our present fertilizer act is an instance. The special discussion at the last meeting was the condition in the Los Angeles Horticultural Commission which is not satisfactory to the members of the club. It was openly charged at this meeting that the appointment was purely a political one forced through against the best judgment of the majority of the fruit growers of Los Angeles county though it was much better than the appointment first slated by the board of supervisors. Three members of the board of supervisors of Los Angeles county and also the state senator and assemblyman of the district in which Claremont is located were present, and the matter of amendment of the present law authorizing county horticultural commissions was discussed. In short the discussion resulted in the suggestions that the original horticultural inspection law should be taken up and passed. The fruit interests were not strong enough at the time it was introduced to carry it through and different concessions were made to politicians. This is now seen to have been a great mistake and the growers are demanding the original bill and the removal of the points conceded that the appointments should be from the county, that the examining board should be appointed by the governor instead of through the state university and the state horticultural commission, and that the commission may have the power of appointing two deputies.

A committee was appointed to present the matter of securing this legislation to the California Citrus Growers' League in the hope that this great organization may be strong enough to secure the support of the legislature and have a law in the interest of fruit growers instead of politicians.



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The addition of enough Potash to the fertilizer is necessary to add strength to the stalks and prevent lodging.

Potash makes the stalks strong enough to stand up under wind and rain. More than that, Potash makes larger heads, better filled with solid, heavy grain.

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5000 Navel Orange trees
5000 Valencia Late Orange trees
3000 Grafted Walnut trees
500 Budded Avocado (Alligator Pear) trees

People who intend to plant lemon or grafted walnut trees this season will have to secure them from some source early as they are now very scarce.

A. R. RIDEOUT

Magnolia Nursery **Whittier, California**

Cultivator Christmas Order

————————1910

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Also notify the parties named that the subscription is a gift from the undersigned.

SIGNED————————————

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Irrigation and Forestry

FOREST CONSERVATION AND TAXATION.

Conservation, from a question of obscurity only ten years ago, has become one of the most vital issues of today, an issue which is essentially economic, and which should not become political or personal. Of the many natural resources that should be conserved, there is none more important than the forest. While the nation and the state are working to devise ways and means of conserving our forest resources, we are at the same time, in a real sense, taxing our timber to death. In those parts of the country where timber is plenty, little heed is paid to the fact that forests are a crop, just as much as grain, and when the individual owner is obliged to pay an annual tax on his growing timber, it is no wonder that he cuts, and usually cuts all. It is the most direct way of escaping practical confiscation through taxation.

Many of the states have passed laws to encourage the planting of trees. If it is a good thing for the state to thus encourage planting, it certainly is a good policy to encourage the forest owner to cut his timber conservatively, and under the best method of forest management. Two great things are keeping many timber-land owners from adopting forestry methods, and these are fire and taxes.

When, by a vigorously enforced uniform law, the responsibility for carelessness which causes fire is well fixed and enforced, as against individuals and railroads, we can properly prevent forest fires. The principle of fire laws is to prevent fires, and this principle should obtain in enforcing as well as drafting them. I believe that the only effective fire system is one where a force of trained fire wardens is provided, whose first duty is fire patrol, and who are sufficiently paid for their work.

As was stated in the report of the National Conservation Commission, from now on the relation of taxation to the permanent usefulness of the forest will be vital, and of the first importance. Our present tax laws prevent reforestation of cut-over lands and the perpetuation of existing forests by a proper use and economic cutting. The importance of the proper use of our privately owned forests becomes immediately more apparent when it is realized that forests privately owned contain at least four-fifths of the standing timber of the country. The Forest Service tells us forestry is now practiced on seventy per cent of the forests publicly owned, but not on more than one per cent of the timber lands privately owned.

How are we to perpetuate our timber resources and care for the future unless the best principles of forestry are practiced by the individual owner? This can be brought about best, in my judgment, by uniform laws for protection from fire and for proper taxation. We tax our forests under the general-property tax, a practice abandoned long ago by other great nations. In fact, we are the only advanced nation with the crop of standing timber on its annual tax roll. As long as forests are taxed on the basis of an annual crop, the holding of young forests until they mature means financial loss to the owner. Under such conditions the establishment of new forests cannot be expected. I believe that the taxation of forest lands should be based upon the yield, when the timber is cut. The timber should be taxed separately from the land, and only like other crops, after it is harvested. The land alone should be taxed annually. The tax on the timber itself, when cut, and an annual tax upon the land, exclusive of the timber, is practical, certain, and fair, and well adapted to American conditions of forest investment. It would insure a permanent revenue from the forests, in place of a temporary one. Such a law would be a tremendous improvement over the present system of taxation, which encourages and even compels forest destruction.

It is realized that the principles which are here recommended cannot be genrally adopted without amendment to the constitutions of many of the states; but a growing public interest in the subject will compel such amendments and open the way for a system of forest taxation which will really encourage the holding of timber and the reforestation of lands otherwise of little economic value. In some of the states steps have already been taken to this end.

As has been well said, "it is better from every side that forest land should yield a moderate tax permanently than that it should yield an excessive revenue temporarily, and then cease to yield at all."—American Forestry.

If you gain your living by your intellect, do not allow your arms and legs to get stiff from disuse; if you earn your living by physical labor, do not allow your mental powers to get rusty, but enlarge your mental outlook by thought.—Medical Review.

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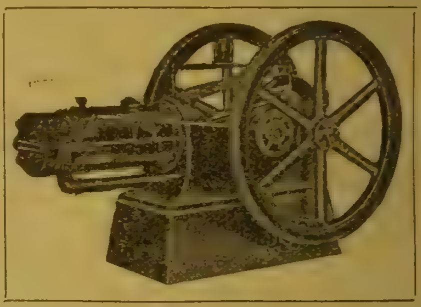

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Not too Light
But Just Right

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After you have carefully examined all other makes. After you have listened to the old story of what they will do and what they can do.

Then—take a look at the car that speaks for itself. The real perfect score car. The car that dreads nothing.

The experience of the Moline Automobile Company as extensive gas engine manufacturers, covering a period of more than fifteen years, has enabled them to perfect a motor which is simple in the highest degree, yet remarkably efficient and smooth in operation.

THE LONG STROKE MOTOR—4x6.

is a feature not found in cars selling at the Moline modest price. It is an improvement in line with extended foreign practice and the higher priced American cars.

The advantage of the long stroke motor is that IT DOES NOT HAVE TO REVOLVE SO FAST to deliver its power. In other words, the long stroke motor will wear longer than the short stroke motor. The high gear can be used at a very low rate of speed. In hill climbing it provides greater power development. This is only one of the many improvements found on the 1911 Moline, it has—

Larger engine—36x3½ wheels, larger tires, longer wheel base, longer springs, more power, more speed, more style, double independent ignition system.

We furnish each Model completely equipped at the following prices:

Touring Car	$1850.00
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Bees and Their Care

NECESSITY OF REQUEENING.

In modern apiculture it is necessary for the beekeeper to be able to get queens, at any time. Many beekeepers requeen all their colonies every year; others requeen every two years; it is necessary, then, that they have some method of rearing good queens to use in this way. Even where frequent requeening is not practiced, it is nevertheless often necessary to replace queens which do not come up to the standard in egg laying. Again, it often happens that a colony becomes queenless by the accidental death of the queen. Such a colony, if left to itself, will rear a queen, provided there are young larvae in the combs, but few beekeepers are now willing to intrust so important a matter to the bees.

Frequent requeening is a very necessary thing if the best results are to be obtained. It is a well-established fact that queens lay more eggs during the first year than in any other, and that the number of eggs laid gradually diminishes until the queen is replaced, because of inability to keep up the colony. Every beekeeper knows, too, that, all other things being equal the greatest amount of surplus honey is produced by the most populous colony. It is evident, then, that frequent requeening means the maximum honey production.

It has not yet been shown that requeening more than every second year pays for the extra labor, but the best beekeepers hold that queens should not be allowed to live longer than that time. There are, of course, exceptional cases in which the queen will keep up the population of a colany for two or even three years longer than the time given; but unless every colony can be watched constantly it will not pay to risk keeping queens more than two years old. An exception to this rule occurs in large queen-raising apiaries where it is desirable to have large numbers of choice drones always on hand. Since old queens lay a much larger proportion of drone eggs, it is often desirable to keep one or two old queens of select stock on this account. There is no evidence that drones from old queens lack anything in vitality.

It is also desirable to have extra queens on hand when the number of colonies in the apiary is to be increased by division or by any of the methods of artificial swarming. If a queen is provided as soon as the increase is made, the new colony will gain about three weeks in brood production over a colony which has to produce its own queen.

The question which arises in the mind of every beekeeper is: Will it pay me to rear my own queens? Very good untested queens can now be purchased for $1, or even less, it is true; but where a large apiary is to be requeened, this amount, though small for one colony, reaches considerable size when multiplied by a few score; and if this amount can be saved and the total net receipts of each colony correspondingly increased with comparatively little labor, it would seem folly for the beekeeper to persist in purchasing queens.

It will, of course, be necessary for the average beekeeper to buy some queens. The selection of fine strains of stock must be left to the professional queen breeder in most cases, and it will be well to buy the breeding stock from some such person. Where no particular improved strain of stock is desired, it may pay the extensive beekeeper to buy an imported queen to be used as a breeder. In the case of Italian bees this does not seem necessary, for very superior stock is reared in the United States, and queen bees of the Italian variety are actually shipped from this country to Italy to be used as breeders. In Carniolan, Cyprian and other races not so much selection has been carried on in this country, and in consequence the desirability of importations is greater in order to insure purity of stock.

Few beekeepers are so situated that they can with profit rear their own breeding stock. It is the rule in some apiaries to choose the queen from the colony with the best honey record as the breeder for the following year, but this, while seemingly good policy, leads to curious errors. Unless it is certain that the queen is of pure stock or of a fixed cross she should not be used, for it is a well-known fact that when a first cross is used as a breeder the resulting offspring are most variable.—Bulletin 55, U. S. Department of Agriculture.

SHORT DISTANCES.

We have had such good success in moving colonies a few rods without having the bees return to the old location that we think the advice sometimes given to move colonies a couple of miles temporarily, and then later bring them back to the new location in the old yard, is now entirely unnecessary. In one moving, October 15, about a dozen colonies were taken away from the north side of a tree and carried to the south part of the apiary. The hives had been arranged in the form of a circle around the tree, and all were removed except those on the east and south side of the tree. As mentioned we smoked the bees thoroughly and pounded the hives vigorously in moving, in order to make sure that the bees filled up before flying.

After about two weeks, when we again had occasion to go to this yard we found that the hive on the east side next to the place where the other hives had formerly stood, contained rather more bees than it did originally, showing that a few had gone back to the old location; and, not being able to find the hive, they had gone into the one nearest. This only goes to show that, when hives are moved in this way, no one hive should be left very near the old location unless it contains a weak colony that should be strengthened. But practically all the few bees that return are old bees any way, and it is a question whether the colonies that lost them will suffer much, or the colony that gained them be much ahead in the long run. Of course, we are referring now to moving that is done in the fall of the year.—Gleanings.

They's good an' bad in most ev-ry-buddy, an' you kin allus git whichever you're lookin' after.

Digs Twice as Fast as Bar and Shovel

This Keen Kutter Post Hole Digger, shown here, is a *labor-saving* tool—really is *two* tools in *one*. It takes the place of ordinary bar and shovel and sinks a hole much faster and cleaner.

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Every farmer's tool-house should hold this post hole digger and a full line of Keen Kutter hand farming tools—forks, scythes, hoes, rakes, axes, spades, shovels, corn knives, etc.; and his shop should be equipped with Keen Kutter carpentry and blacksmith tools. Sold under the famous Keen Kutter guarantee, which means satisfaction or money back.

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CATALOGUE FREE.

Thirty-Four Years Experience in California.

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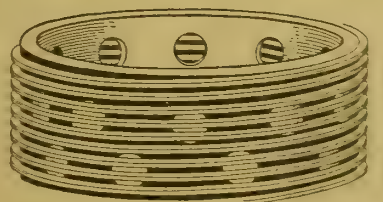

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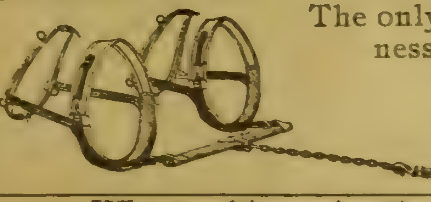

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PRICE, $17.50

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Stockton, Cal.

California Cultivator

Clubbing Price List

FOR THE SEASON 1910-'11

Prices are Good to Oct. 1, 1911

This magazine price list is prepared annually for the convenience and benefit of Cultivator subscribers. The prices given allow our readers the benefit of the lowest figures possible, in return for which, all we require is that to all orders a year's subscription to the Cultivator (class 18) be added at 90c (regular price $1.00 per year).

This year the pricing of various combinations of magazines is a simple matter; all are listed according to class number and this class number multiplied by 5 gives the cost price.

EXAMPLE:

Class No.		Regular Price
20	American Magazine	$1.50
16	Delineator	1.00
37	World's Work	3.00
18	Cultivator	1.00

91X5=$4.55. Club price for all. Amount saved on this club, $1.95.

We desire to especially call attention to this complete list of the most popular magazines. We can, however, supply any periodical published, at the lowest price, and any not listed here will be quoted on request. Let us make you a price on any combination you may desire.

Periodicals in any combination may be ordered to the same or different addresses. Foreign or Canadian subscriptions are extra on account of added postage and prices must be gotten by correspondence. Subscriptions may be either "new" or "renewals," but it is important that this information be given in each case.

Books—Send us a postal for our list of agricultural books which we supply subscribers and which we recommend as most suited to California conditions.

Don't overlook this special:

The California Cultivator (weekly)
The Rural Californian (monthly)
Both one year for $1.50

Our Money-Saving Combinations:

The price of the Cultivator and any single magazine may be obtained by adding 90c to the class price of the magazine desired.

Make up your orders from the following, noting that the class numbers multiplied by 5 gives the cost price. Also bear in mind that **all orders must include a year's subscription to the Cultivator (class 18) at 90c.**

MISCELLANEOUS

Class No.		Reg. Price	Class No.		Reg. Price
19	American Sheep Breeder	$1.00	8	Ladies' World	$0.50
47	Automobile	3.00	17	Human Life	1.00
8	Boys' World	.50	9	McCall's Magazine	.50
23	Breeders' Gazette	1.75	12	Modern Priscilla	.75
27	Cassell's Little Folks	1.50	15	National Monthly	1.00
77	Century Magazine	4.00	70	North American Review	4.00
65	Country Life in America	4.00	47	Outing Magazine	3.00
12	Designer	.75	8	Reliable Poultry Journal	.50
8	Girls' Companion	.50	40	Scientific American	3.00
70	Harper's Weekly	4.00	60	Scribner's Magazine	3.00
70	Harper's Magazine	4.00	57	St. Nicholas	3.00
			15	Woman Beautiful	1.00
			37	World's Work	3.00

CLASS 16.

Amer. Agriculturist	$1.00
Black Cat	1.00
Cooking Club Mag.	1.00
Delineator	1.00
Health	1.00
Housekeeper	1.00
Judge's Library	1.00
Judge Quarterly	1.00
Orange Judd Farmer	1.00
Pacific Monthly	1.50
Pictorial Review	1.00
Progress Magazine	1.00
Sis Hopkins	1.00
Uncle Remus	1.00
World's Events	1.00

Any two $1.60

Any three $2.40

Any four $3.20

Any one with 1 of class 17 $1.65

Any two with 1 of class 17 $2.45

Any one with 1 of class 20 $1.80

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CLASS 17.

Amer. Bee Journal	$1.00
American Boy	1.00
Am. Primary Teacher	1.00
Boston Cooking School Magazine	1.00
Camera Craft	1.00
Children's Magazine	1.00
Cosmopolitan	1.00
Dressmaking at Home	1.00
Electrician and Mechanic	1.00
Health Culture	1.00
Human Life	1.00
Little Folks	1.00
Motor Magazine	1.00
National Sportsman	1.00
Nautilus	1.00
N. Y. Tribune Farmer	1.00

Any two $1.70

Any three $2.55

Any four $3.40

Any one with 1 of class 16 $1.65

Any two with 1 of class 16 $2.50

Any one with 1 of class 20 $1.85

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CLASS 20.

American Magazine	$1.50
Columbian Magazine	1.50
Good Housekeeping	1.25
Harper's Bazar	1.25
Metropolitan Magazine	1.50
Pearson's Magazine	1.50

Any two $2.00

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Ainslee's Magazine	$1.80
American Magazine (after Feb. 25, 1911)	1.50
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Physical Culture	1.50
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Current Literature	$3.00
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Recreation	3.00
Review of Reviews	3.00

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House and Garden	3.00
Mining World	3.00
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Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

What Separator?

I wish to get a separator for use in our family. We have two cows. Will you kindly tell me what make and size I will find the most satisfactory? —B. P. G., Eagle Rock.

I have used Empire, De Laval, Sharples and Danish Western — all did good work. I would buy the separator that had an agency nearest to reach. The fact is all are good enough in the standard makes. I would not buy a mail order house machine, as those I have seen were flimsy, but I would examine the machine carefully and secure instructions from a good operator as to running it properly and well. The skill required is not great, but the separator will last longer if run according to the designer's plan. —M. E. S.

Chicken Pox.

I had a hen whose head broke out in scabby sores different from anything I have seen in a life's experience. The first sore appeared on the eyelid, then anywhere about the head and one on the foot. She did not seem sick. I put her in hospital and used Germozone for a week or more, then concluded to kill her. Now find others affected. Droppings healthy, appetite good, and apparently laying. Hens have roomy quarters, good ventilation and all kinds of care. —A. R. S., San Luis Obispo.

This is a plain case of chicken pox.

In treating, wash the birds' faces and combs with carbolic soap suds; anoint with vaseline or fresh lard.

Also Chicken Pox.

Chickens first start with small sores on their eyes which resemble warts. They get larger and more come and extend to the end of the bill. They cannot see a thing by this time. The sores seem to itch as they will scratch them until they bleed.—W. P. M. Hanford.

See answer to similar query in this issue.

Book on Goats.

Where may I secure a book giving information on goats? Where do the Toggenburg and Saanen come from? —J. G. S.

We do not know of any book especially given to milch goats, but would refer our subscriber to "Types and Breeds of Farm Animals" by Chas. S. Plumb, which gives descriptions of milch breeds of goats as well as other domestic animals.

The Toggenburg is from the Toggenburg Valley in Switzerland, the Saanen from the valley of that name, also in Switzerland. Some claim that they are the same breed with only slight differences produced by the fancy of the breeders in the two sections, and that they vary only in minor points.

Bordeaux.

Have peach orchard of five acres and would like to know how to spray with bluestone and lime. We notice it takes a long time to dissolve the bluestone. Is it proper to dissolve it in hot water?—Subscriber, Gridley.

If our subscriber will refer to the issue of the Cultivator of November 3rd he will find full directions for making the Bordeaux, or, as he says, the lime and bluestone. The dissolving is much more rapid if the bluestone is suspended in a coarse sack near the surface of the water in the barrel, but if thrown into the barrel and allowed to settle to the bottom the process is much slower.

Hydrate of Lime on Alfalfa.

Is hydrate of lime any benefit to alfalfa on sandy loam? How much should be applied to the acre?—Subscriber, Modesto.

Alfalfa requires a lime soil for best results. As to whether it would pay to apply hydrate of lime, that can only be told by analysis of the soil or by experiment, preferably the latter. We would imagine, however, that crushed lime rock or a low grade of air slacked lime would be preferred to the hydrate as to cost, and doubtless would be fully as effective.

Salt for Yellow Leaves.

What is the value of chloride of sodium, common salt, on mottle leaf orange trees, and how much should be used. Understand this has been used to advantage on such trees.—N. P. M., Baldwin Park, Los Angeles.

This is a new suggestion and we question the benefit from the salt treatment. However, we will be glad to hear from subscribers who have made the application.

Bounty for Shade Trees.

Is there any bounty paid or allowed by the county or state for shade or ornamental trees planted along roadways. Also what are the regulations as to pruning and removing shade trees?—R. W. F., Colton.

It is certain there is no bounty paid by the state, and we know of no county that pays one. The increase in real estate values is in a sense a bounty, however. Many municipalities have made certain restrictions as to planting and have named certain trees which may be planted on the streets. Pruning is also under municipal direction and it is a subject on which there is need of more legislation and uniform action.

Pruning Palms.

How should I prune fan and date palm trees? I wish mine to grow high.—Subscriber.

We never have heard of any particular requirements in the matter of pruning, the usual plan being to take off leaves as soon as they turn brown. Again, when near a path or where it is desired to keep them out of the way the leaves are pruned off as fast as they become objectionable. This regardless of the season of the year, so far as we have ever heard. The tall growth is a matter of variety more than of pruning, that is, with the fan palms, the Washingtonia; with this family the robusta grows taller than the fillifera.

Persimmon on Quince.

Can Japanese persimmon be successfully budded upon quince stock? Subsciber, Sultana.

We cannot answer this definitely, but would doubt very much the possibility, for the quince is of an entirely different family from the persimmon. The quince will accommodate the apple and pear, but other families could hardly be expected to adapt themselves to it.

Grafting Oranges.

How may I graft over a seedling orange and what is the best time of the year?—Subscriber, San Jose.

Grafting is not followed with citrus trees, budding being preferred. If the tree is old with the younger branches so high as to leave the top too much up in the air, it is best to cut off in early spring, say February or March, some of the larger limbs, leaving part of top, when these limbs will send out a number of strong young shoots. The following fall these shoots may be budded and the buds will remain dormant until spring. In case the bark is not too old and thick and will still lift, budding may be done directly if care is used in securing as old budding wood as possible. This should be in March or April when the sap is flowing, as will be manifested by strong young growth.

Yellows of Oranges.

What will overcome yellow leaf of orange trees?—Subscriber, Sultana.

This is doubtless chlorosis or mottle leaf of the orange tree. It is a condition variously ascribed to poor mechanical condition of the soil, too much magnesia, hardpan, lack of nitrogen and many other causes. Past Cultivators have given much attention to this, and by referring to the file our subscriber may find much information in the query and citrus departments. Generally improvement of conditions and fertilizing with stable manure usually give relief.

Roses from Cuttings.

How can I grow roses from cuttings?—Subscriber.

Rose cuttings may be made at any time when the parent plant is dormant. Best results are secured by rooting in clean sand in glass houses. But roses root so rapidly that we have seen cuttings taken from the bush, the cutting being say ten inches long, and the size of a lead pencil, two-thirds of it buried in the soil in which it is to remain, after that being given regular gardening care. Three-fourths or more of the cuttings will root and give blossoms the first season. There are some varieties, however, like the Marechal Neil, which are almost impossible to root.

Small Fruit Planting.

Should grapevines, blackberries and other small fruits be planted in rows running north and south or east and west?—Mrs. A. C. D., Bell Flower.

We never have heard this discussed except where the small fruit were interset in orchard. In such cases many growers think that they secure more sun and are more thrifty if planted in rows running north and south, but as to direction of the row where the entire field is given to culture of small fruits, we would not consider there was any preference.

Aphis on Peas.

How can I get rid of aphis on peas, also mildew?—C. B., Highland.

Probably the best spray for aphis is kerosene emulsion or tobacco extract wash, but they are persistent and will require frequent sprayings wherever conditions are favorable to their increase. Mildew may be controlled by spraying with sulphide of potassium, formula for which may be seen in the Cultivator of November 3rd.

Fruit Trees for Shade.

What are the tallest fruit trees I can plant for shade on western side of my bungalow?—Mrs. A. C. D., Bell Flower.

Except for being infested with black and brown scale, the apricot is one of the best as it is a very strong grower and one of the best shade trees. If planted they should not be so near the bungalow that they cannot be sprayed to keep free from the scale which exudes a honey dew, often dropping on porches and walks. The walnut is also an excellent shade tree. If an evergreen is desired the olive is an exceptionally fine tree, but a slow grower. The pear is a close growing tall tree, but has little shade value.

Hogs in Fig Orchard.

Will hogs pastured in fig orchard injure the trees? Will it injure the trees to put land in alfalfa? Have grown Egyptian corn among them. We do not need to irrigate as alfalfa will do well without it.—Subscriber, Goshen.

We do not believe best results in fig culture can be had when growing alfalfa between rows. A warmer condition of the soil is required than is possible when the land is shaded by the alfalfa. Besides unless the supply of moisture is very great the alfalfa will remove sufficient to deprive the figs of their required amount. Both the questions of moisture and fertilization should be considered, for if crops are removed continually in addition to the requirements of the fruit trees, the trees will surely suffer. We do not think the hogs would do any injury whatever; in fact, would be a benefit to the orchard.

Ground Squirrel Eradication.

Is there any law in Kern county or in the state requiring eradication of ground squirrels?—Discouraged Subscriber.

This subscriber's land is surrounded by unoccupied land which is infested. He should appeal to the authorities of his county for the enforcement of the state law to compel cleaning up of the surrounding land. Whether Kern county has an additional ordinance in the matter we are not informed.

Market for Licorice.

Where can I secure market for licorice root?—Subscriber, Westminster.

We would recommend our subscriber to write to the Braun Chemical Co., 906 East Third St., Los Angeles.

Pickling Olives.

Please give formula for pickling olives.—Mrs. F. M. D., Covina.

If subscriber will refer to our issue of September 15, 1910, she will find a tested formula given by Mrs. Sherman.

Loquat Tree.

To what height do loquat trees grow?—Subscriber.

Fifteen to thirty feet.

Legal Queries

Edw. L. Payne, attorney, 301-304 Douglas Building, Los Angeles, will answer legal queries in this department.

Immediate mail replies cannot be given except where fee to Mr. Payne is paid. When replies are wished in Cultivator address query to 115½ N. Broadway, Los Angeles.

Trespass.

Has B the right to fence his property to exclude A's cattle if watering trough used by A is on B's land? Is A responsible for all damage caused by his cattle on B's land? If A's cattle have the right to water on B's land, have B's cattle the same right on A's land?—T. Igali, Oakland.

B has the right to fence his property so as to exclude A's cattle. A has the like right with reference to B's cattle. Where the parties fail to maintain a fence on their boundary line, each owner is bound to keep his cattle on his own property, and is liable for any trespass committed by the same.—E. L. P.

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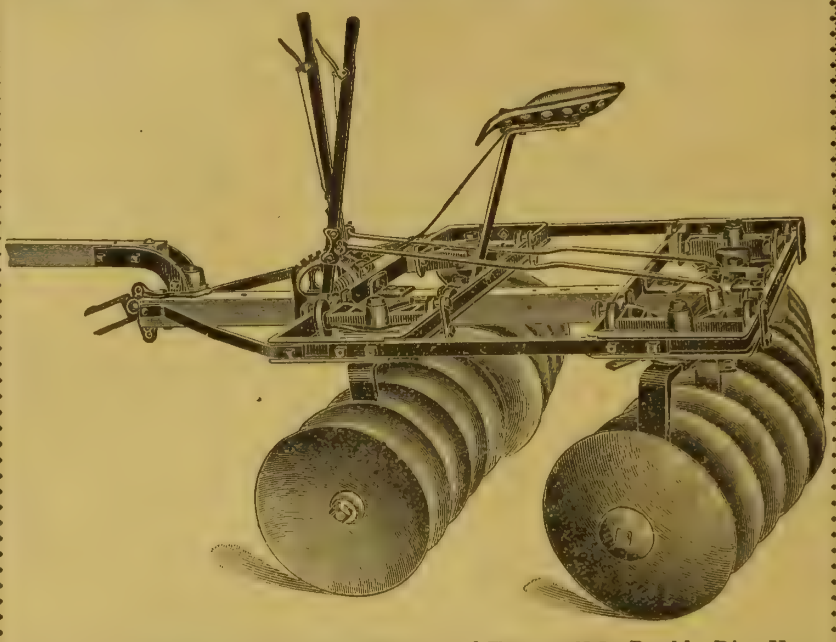
Read the Cultivator's Christmas Offer, page 611

Western Double Disc Harrow



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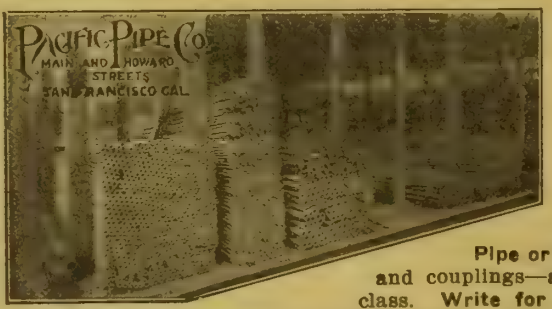

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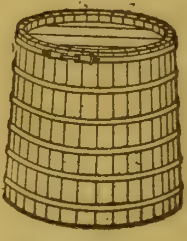
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STRAWBERRY PLANTS

75 per cent of the strawberries sold in Los Angeles last season were **KLONDIKE BERRIES** 90 per cent of the strawberries shipped last year were **KLONDIKE BERRIES.** Why? What plants are you going to set out.

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General Agriculture

CROP ESSENTIALS.

The following has been gleaned from the address by Dr. Cyril G. Hopkins, of the University of Illinois, to a large audience of farmers at the State Institute in Edwardsville:

Three absolute essentials are of just as great importance for plants as animals—good breeding, good feeding and good care. In animal production each of these factors has, as a rule, received much consideration. But in crop production the average farmer does not give much attention to the selection of seed, and does not provide plant food for the crops. The farmer still practices every expedient known to man to get the fertility out of the soil without making any adequate return. But some Illinois farmers are already adopting permanent systems of farming under which the soil grows positively richer and permanently more productive. The cost of all the farm operations in growing the corn crop is just the same whether we grow forty bushels or eighty bushels to the acre.

The esesntials in a system of farming that will increase and permanently maintain the fertility and production of the common land of Illinois are phosphorus, organic matter and limestone. Half a ton per acre of finely ground natural rock phosphate every four years will be ample.

To Get Organic Matter and Nitrogen.

For a fifty-bushel crop of corn we must plow under the equivalent of eight tons of average farm manure, or two tons of clover hay, and whoever fails to do as much as that will finally have soil that will not produce fifty bushels of corn per acre. That is a plain, hard, agricultural fact. The nitrogen of our soil is contained only in the organic matter, which in our common soil consists of the partially decayed roots and residues of prairie grasses or other vegetation.

The grain and straw (or stalks) for one bushel of oats requires one pound of nitrogen; of corn, 1½ pounds; of wheat, 2 pounds; a ton of timothy hay requires 24 pounds. When the stalks or straw are burned, one-third of the nitrogen in the crop is lost. A ton of average manure contains 10 pounds of nitrogen; a ton of clover hay, 40 pounds; a ton of cowpea hay, 43 pounds. The roots and stubble of clover do not return to the soil any more nitrogen than the crop takes from the soil. Half the value of manure is lost, as a rule, if it is left exposed for three months.

Use enough limestone to correct the acidity, and about two tons per acre every four years to keep the soil sweet.

Where $1.50 Will Return $10.

The phosphate and limestone will cost about $1.50 per acre a year, delivered at almost any railroad station in Illinois. After this system is well under way the phosphate and limestone will add a ton per acre in the clover crop, 10 bushels of wheat and 20 bushels of corn, above the yields without limestone and phosphate. The proofs are shown by absolute chemical analysis and by the accurate results of hundreds of actual trials on many experiment fields. Thus, plots at the University which yielded 63 to 66 bushels per acre as a three-year average when broken from the sod in 1895, have as the average of the last three years yielded as follows: With catch crops and crop residue, 58 bushels per acre; with organic matter and limestone added, 64 bushels; with organic matter, limestone and phosphorus, 87 bushels; phosphorus plots have grown about one ton more clover per acre.

Mann Makes Practical Proof.

Hundreds of practical, progressive farmers in Illinois have been using phosphorus from one to five years. So far as I have learned, no man has given the use of phosphorus a fair trial and been disappointed in the result secured. Frank I. Mann, who farms 500 acres in Iroquois county, has already covered all of his fields with half a ton of rock phosphate per acre, excepting check strips, and part of the farm has received the second application. His result, showing large increase from the use of phosphate during several previous years, will be found in the institute report for 1909.

Good Results in Southern Illinois.

At Odin, Marion county, as an average of the last six years, limestone has increased the yield of wheat from 15 to 19 bushels, and both limestone and phosphorus have increased the yield from 15 to 27 bushels. Many thousand tons of ground limestone are being used each year by Southern Illinois farmers. There limestone is of first importance, but as soon as organic matter can be plowed under, phosphate should also be added; while on the corn belt soils phosphorus should first be applied, especially for the benefit of the clover crop, and on most of the older soils limestone also. But the organic matter of the soil must also be maintained by plowing under much clover and all produce except the grain, or by using all produce for feed and bedding, and returning all manure to the land with the least possible loss.

The Rotation of the Check Book.

For anyone to believe that crop rotation alone will maintain the fertility of the soil reveals gross ignorance of agricultural history and of absolute science; and for one to teach such a doctrine is a crime against posterity. Mathematics alone will show that the rotation of crops will no more maintain the fertility of the soil than the rotation of the check book among the members of the family will maintain the bank account. But someone will ask: Don't we get larger crops when we rotate? Certainly; and don't we also get more money out of the bank by rotating the check book? It is a fair comparison.

Production Not Holding Its Own.

The official statistics of the United States show that consumption has overtaken production. As an average of forty years we have scarcely maintained our yield per acre, in spite of the use of new lands and improvement in seed and in methods of cultivation; and we supported our increasing population only by increasing our acreage of cultivated land, and in late years we have also been compelled to decrease our exportation of foodstuffs in order to maintain a high standard of living.

Use Phosphorus Instead of Exporting.

The United States exports more than a million tons a year of our richest phosphate rock, receiving less than five million dollars at the mines. If this phosphorus were applied to our own Illinois lands, it would be worth to us and our children. not five million, but at least a thousand million dollars. If you had a 240-acre farm, upon which you and your children must depend, it would be altogether sensible, wise and businesslike to sell forty acres at $200 an acre and invest the money in 1,000 tons of phosphate, with which you could double the phosphorous content of the remaining 200 acres.

The Kind to Use.

Don't use burnt lime, which is very expensive and tends to burn out the organic matter of the soil and to destroy or waste the nitrogen; apply the natural limestone. When you apply phosphorus, don't use small amounts of manufactured, acidulated, high-priced commercial fertilizers, which serve as soil stimulants, and which have been used so extensively in the Eastern states in systems which led only toward ultimate land ruin; but use large amounts of steamed bone meal in emergencies, or, better, still larger amounts of fine ground natural rock phosphate, neither of which will ever injure any soil.

Let us have one state in the Union whose soil shall not be ruined, and whose children shall not be left with only a memory or tradition of the bountiful harvests of former years.—Hoard's Dairyman.

INVESTIGATION FOR GRASSHOPPER EGGS.

By S. Arthur Johnson, Colorado Agricultural College.

This is the proper time of year to investigate the fields in order to find the condition of grasshopper eggs. So far as the writer has observed, he has found that the eggs are rather locally distributed. When such is the case, the problem of their destruction is simplified and the cost of the operation much reduced.

From a great many localities reports have been received that the insects did not lay many eggs last fall. This may be true in many instances, but places have been found where there were many pods of eggs to the square foot. If these places are not thoroughly cleaned out, they will furnish infestation for the surrounding fields.

Grasshopper eggs are laid in pods, about an inch or an inch and a half long, just under the surface of the ground. A variety of situations are selected. Different kinds of hoppers appear to select different conditions. Some kinds lay in dry locations where the soil is firm, such as ditch banks, paths and knolls in the field. Others lay among the grass roots and about the stems of alfalfa, weeds and other plants.

The best way to hunt for eggs is to take a shovel and skim off the surface of the ground about an inch deep. This will generally cut the pods open so that they are easily seen. It will pay the farmer to spend a day or two going over his property. Pass along the fences and over the ditch banks, uncovering a square foot of earth every few feet or a rod. Look in all sorts of locations. Then cross the fields several times, in several directions, examining the ground all the way. By this means the infested spots can be found and cleaned out. If eggs appear to be generally distributed over a field, it will be well to plow or disc it one or more times in late fall or early spring, preferably both. Deep plowing will put the eggs so deeply under the ground that very few of the young will ever reach the surface, even if the eggs hatch. Discing and shallow plowing will tend to break up the pods and expose them to the weather and the ravages of birds so that they will be very largely destroyed.

The most difficult places to clean out are along the fences and ditch banks. A plow may be run as closely as possible on either side of the fence and the strip between grubbed out. This means considerable work, but the places where such careful work is needed are usually small and careful investigation will materially lessen the amount of labor.

CARE FOR THE GRINDSTONE.

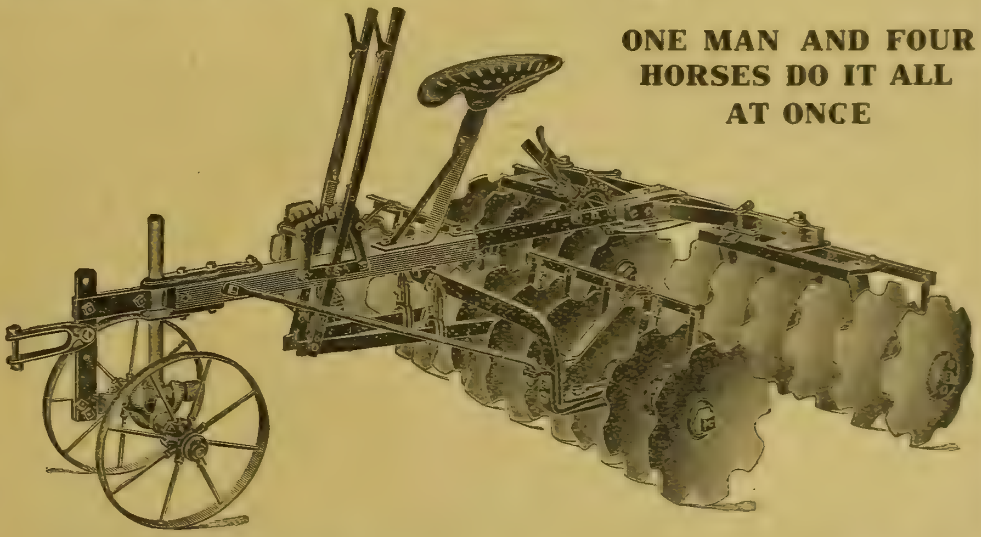
Although not a gem of purest ray serene, the one precious stone that is worth many thousands of dollars is universally neglected. Many boys early learn to despise it, but the grindstone is a most useful and necessary part of every country place equipment. Left under a tree, perhaps in shower and sun it is uncared for and unthought of except when needed. Then the user berates its hard spots and soft notches, its rickety frame and creaking bearings. "It's out of true and a nuisance, too."

Let the grit be sharp, not too fine, and the same on all sides. Let it be hung carefully and in a frame made for it, and have a trough prepared to set under it at once, so it will turn always in water. The stone should not stand in it. Three little things should always be at hand near the grindstone, an oiler for the bearings, an old file with which to turn it true, and a piece of common brick. When we are in a hurry and the stone apparently turns round and round under the scythes or knives as if its surface were greased, then is the time to hold on the brick for a minute. A Dutch farmer showed it to me. It will surprise you to see how soon the grit begins to take hold of the steel again. Some grindstones have no trough, and a drip is arranged to let water flow onto them. It is a poor makeshift at best. The flow is always too fast or slow, is clogged, or the can is empty, and as a result the grinding suffers, much time is wasted and the dirty water is thrown over the grinder or upon the floor.

If grindstonces were maintained as respectable machines, well cared for and easy to turn they would not be dreaded and avoided, and many a piece of work would be done, better because of sharper tools. Anybody can make a treadle in a minute. The only things needed are a board three feet long and a piece of heavy wire. First, a loop is made in one end of the wire, this put through a hole in the board, or it may be put around the board and the other end of the wire fastened to the short crank of the grindstone shaft; just a loop that may be slipped off readily when required, and the thing is done.—New England Homestead.

I've squandered smiles today,
And, strange to say,
Although my frowns with care I've stowed away,
Tonight I'm poorer far in frowns than at the start;
While in my heart,
Wherein my treasures best I store,
I find my smiles increased by several score.

—John Kendrick Bangs.



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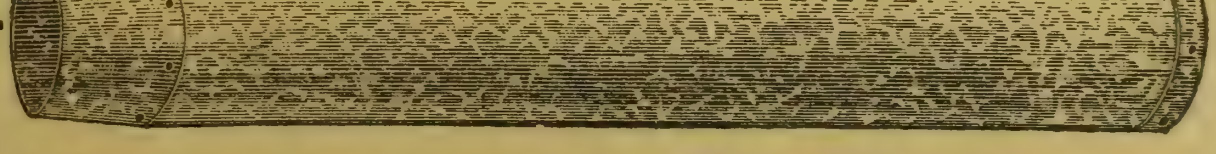

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For Sale—Registered Holstein Bulls; 1 to 2 years old. Some sired by Prince Juliana, brother of former world's record heifer, Juliana De Kol. Dam and granddam, A. R. O. cows. Three record-breakers in some of their pedigrees. M. E. Sherman, Minnewawa Vineyard, Fresno, Calif.

Fistula, Poll Evil, Quittor and all running sores cured permanently by a recent discovery of medical science. Write for particulars. Dr. Fred G. Matthews, Veterinary Bacteriologist, 1232 Central Ave., Los Angeles.

A few young White Hornless Swiss Saanen Grade Milch Goats for sale. Mrs. E. Banta, Calistoga, Cal.

Angora Cat—Splendid blue tom by Blue Boy out of imported Fluffy, $50.00. B. A. Stocker, San Luis Obispo, Cal.

Registered Shorthorn Bulls and Poland China Hogs for sale. Best breeding. P. H. Murphy, Perkins, Cal.

WANTED.

Wanted—Four or five hundred two or three-year-old seedling grape fruit trees, first class, grown from straight seedlings seeds (not budded seedlings seeds), three-quarters to one inch in diameter, 2½ to 3 feet high; must be growing in the nursery and never budded, clean and free from scales. State price. E. S. Lewis, Ontario, Cal.

Wanted—Your work pays the expense to learn a trade that pays $5 a day, in a few months' time; electricity, automobiles, plumbing, bricklaying; actual contract jobs; 200 students last year. United Trade School Contracting Company, 647 Pacific Electric Bldg., Los Angeles, Cal.

A Young, honest, industrious American, thorough High School education, willing worker, trusted anywhere, wants position on some large cattle or dairy ranch. Best of references. Address Box P, Cultivator.

Help Wanted—We want several good solicitors to solicit for a high class suburban monthly publication. Good profitable employment to the right party. For particulars address Box H, Cultivator Office, Los Angeles

Wanted—500 ft. of 7 or 8-in. galvanized irrigating pipe. Address J. T. Morgan, 619 W. 45th St., Los Angeles, Cal. Tel. South 292.

Wanted—From one to three thousand acres of land. Wm. Paramore, Hollywood, Cal.

TREES.

For Sale—About 3000 Washington Navels and 7000 Eureka and Lisbon Lemons, one year old, thrifty stock and free from scale. Nursery near Mentone. Address 428 Court St., San Bernardino, Cal.

Bonvalliets Giant, new Chicako variety, 2 years, $5.00 per 1,000; Palmetto, $4.00 per 1,000. Plant early. Deciduous fruit trees in dormant bud, $5.00 per 100; will pack light. D. Turner, Phoenix, Arizona.

For Sale—Gravenstein apple trees from 5c and up. We grow everything. One tree of best apple on earth, postpaid to any P. O. for 10c in stamps. The Cash Market, Sebastopol, Cal.

For Sale—250,000 first-class rooted vines, Zinfandel, Tokays, Muscats, Black Morocco, Black Ferrara, Cornichons, and Emperors in 1,000 lots at $11.00, smaller lots $1.50 per 100. Geo. McArthur, Acampo, Cal.

Ornamental Eucalyptus—Cleanest and best shade trees for the ranch. Acacias, pines, etc. Large stock. Ballou's Nursery, 728 East Orange Grove Ave., Pasadena, Cal.

Write for Special Price on peach trees and French prune trees, on Myrobolan root. Gridley Colony Nursery, Gridley, Cal.

Marsh Seedless Grapefruit—600 large trees for sale. E. S. Thacher, Nordhoff, Cal.

Black Walnut Selected Trees—One and two years old, 2 to 8 feet high. Also seedling peach trees, good stock, and Maliner Keen Horseradish sets. A. P. Henning, Clements, San Joaquin Co., Cal.

Eucalyptus—200,000 Rostrata and Tereticornis. Ready for fall delivery, 6 to 12 inches, $7.50 per thousand, F. O. B. Pomona. Logan Russell, Pomona, Cal.

For First-Class Valencia and Navel Orange trees and Eureka lemons, see A. G. Snow, Oxnard, Cal

Fine Line of Navels—Valencias and Eureka lemons for delivery spring of 1911. Contract now and get the first choice. The King Citrus Nurseries, Whittier, Cal.

NURSERY STOCK.

Having bought our seed of Luther Burbank, who guaranteed it selected seed, mostly from Giant Crimson Winter Rhubarb, we feel in shape to offer choice Crimson Winter Rhubarb plants for this year's planting at reasonable figures. Write for particulars. B. B. Currier, Sea Bright, Cal.

Rivera Nursery, L. L. Bequette, Prop.—Wholesale and retail dealers in Northern and semi-tropical trees, shrubs, roses, green house plants, etc. Have good stock of apples, peaches, etc. Send for descriptive price list. 625 S. Breed St., Los Angeles, Cal.

Our Descriptive Price List No. 2 contains all novelties exhibited at the Pasadena Flower Show, also other new introductions by Dr. Franceschi; mailed free on application. Montarioso Nursery, Box 1500, Santa Barbara, Cal.

Strawberry Plants—Fine ones. A No. 1. Dollar and Jessies $3.00 per 1,000. Special prices on larger orders, or to the trade. J. A. Powell, R. D. 1, Box 1, Ripon, Cal.

For Sale—Lawton Blackberry, Red Logan, Mammoth Blackberry plants, fine canners. $1.50 per 100. Also 5 acres of choice land close to cars, store, school, $1400, on easy terms. Frank Lima, Sebastopol, Cal.

Improved Superlative Red Raspberry Plants—Largest raspberry in cultivation. 100 plants, $5.00. Send for description. William Richard, 438 River St., Santa Cruz, Cal.

RARE PLANTS.

Wild Plant Improvement Gardens, Santa Ana, California. Newton B. Pierce, proprietor. Rare choice ornamentals and new fruits from all lands

Abuacates, Alligator Pears (Persea Gratissima). Fresh Mexican seeds, none better for stock; $4.50 per 100 seeds; $40.00 per 1000 seeds. Montarioso Nursery, Box 1500, Santa Barbara, Cal.

FARM LANDS FOR SALE.

For Sale—A 20-acre farm for $20 cash and $20 a month; possession now; $90 to $125 per acre; your crops pay for the land. Rich, level land for alfalfa, oranges, almonds, grapes, cows, chickens; abundance of ditch water, for irrigation, for $1 an acre a year. Where else can you get this? In Oakdale Colony, near good town and railroad station, climate delightful. T. Wiesendanger, 207 S. Broadway, Los Angeles, Cal.

For Sale—155½-acre ranch in Owens Valley. 120 acres in cultivation, balance good pasture. 12 acres in 2-year-old Winesap apples. Work stock, farm implements, milk cows and 100 head hogs. Ranch 2½ miles from county seat. Mountain water, continuous flow, no assessments. A good opening for dairy or creamery. Address owner, Box 52, Independence, Inyo County, Cal.

For Sale—815 acres in San Luis Obispo County. A typical dairy ranch. Plenty of wood, water, irrigable land, buildings, fenced and cross fenced. Orchards, vineyards, oranges, lemons and walnuts do exceedingly well here. Forty acres of land suitable for these. Price $21 per acre. For further particulars apply to Mrs. F. A. Clink, Pozo, Cal.

For Sale—The Fresno Meadows Colony is now opened for settlement in lots of 40 acres or more with water at $50 per acre. This is an opening price and is made to induce settlement. Arrangements can be made so that the first payment will carry the deal indefinitely. Call or write at once. Green & Webb, Gen. Sales Agents, 406 Laughlin Bldg., Los Angeles. Phone A8284.

Tulare County—652 acres at $42.00 per acre. Good terms. One-third mile from switch and flag station, main line S. P., 2 miles from town and school. Over 600 acres of this, the very best, level alfalfa land. Unlimited pumping water at shallow depth, besides artesian water deeper. Electric power line near. Fine for subdivision. C. H. Biggin, Pixley, Cal.

For Sale—Ranches and country homes specialized. Exchange and market for this class of property. Accurate and reliable information always. Full particulars of beautiful and profitable home with acres. Parrish Barker, 207 Union Trust Bldg., Los Angeles.

60 Acres in Santa Clara County. A splendid dairy ranch. Good barns, dwelling and water supply. ¾ of it in excellent stand of alfalfa; close to railroad; one hour's run from San Francisco. Address 281 North Third St., San Jose, Cal.

Irrigated Land—The famous Gridley Colonies, Improved lands, best homeseekers' proposition in California. Write for particulars. Gridley Land Co., Gridley, Cal.

For Sale—El Cajon Grant Land. Virgin soil, 4 miles to railroad, good farm land at $30 to $60 per acre. S. B. Hawley, 1548 D St., San Diego, Cal

Cuba—Most productive soil. Delightful and healthful climate. Ample rainfall. Cheapest transportation facilities to the world's greatest markets. Particulars free. Sanderson, 13 Palace Building, Minneapolis.

Apple Orchards—Large and small, in the only apple producing section in California. The greatest section west of Missouri River. Write for booklet. Geo. W. Sill & Co., Watsonville, Cal

MACHINERY

For Sale—A good portable drilling rig, good for 800 ft., complete string of tools. About half its value, at $750.00. Address M. H. Magie, 1242 Harvard Blvd., Los Angeles, Cal.

TURKEYS.

Thoroughbred Mammoth Bronze turkeys 8 mo. old, of large size and fine markings. Toms $8, hens $6. Can sell you toms and hens not related. Mrs. Nellie Hart, Holtville, Cal.

For Sale—Thoroughbred Mammoth Bronze turkey toms, spring hatch. Only a few left, all fine, large, well marked birds. Have two female Scotch Collie pups left, pedigreed stock. Mrs. A. C. Wisegarver, San Fernando, Cal.

For Sale—One thoroughbred bronze gobbler, 8 months old, 18 pounds, price $8.00. A. H. Burlingame, Westminster, Cal.

Bronze Turkeys for sale. Good stock at $3 to $4 each. L. Haynes, Madera, Cal.

HORTICULTURAL PRINTING.

The Kruckeberg Press, 123 South Los Angeles St., Los Angeles, Cal., makes a specialty of Horticultural Printing and Engraving. Cuts and illustrations of all standard, economic and ornamental plants on hand and subject to the use of patrons without cost. Samples and estimates cheerfully furnished. Remember, we design, write, engrave, bind and print; in brief, do the "whole thing," at no additional expense to the customer. Correspondence a pleasure

DAIRY SUPPLIES.

Have You a Cow?—Have you a creamery? Have you a cheese factory? Write us. Everything used in either a dairy, creamery, cheese factory, or for handling milk, cream, butter, or cheese. We are in a position to quote you prices on entire creamery or cheese-making outfits. We make a specialty of only the latest and best sanitary machinery and supplies. Send us a list of what you want and we will quote prices which we feel certain will interest you. O. J. Weber Co., 225-227 East Sixth St., Los Angeles, Cal.

Milk Coolers, Bottles, Caps, brushes, Buhl milk cans, Sharples separators, Babcock testers, veterinary instruments, wood soled boots and shoes, and our celebrated "Prosperity" washing powder. Guy F. Kelsey 108 E. 8th St., Los Angeles, Cal

FOR THE HOME.

Raisins—Recleaned, ready for use, Thompson Seedless Raisins, absolutely free from all stems and dirt. Cleaned by machinery. Housewives' delight. Better than candy for the children. Nature's own health food. Drop us postal for sample, or send $3.00 for 50-pound box. Fowler Fruit Co., Fowler, Cal.

Raisins—Producer to consumer, new crop loose Muscatels in 50-lb. boxes, 2 crown, 4c; 3 crown, 4½c; 4 crown, 5c; guaranteed. A. H. Dugdale, Etiwanda, Cal.

POULTRY.

How to Make Money—Mrs. A. Basley's New Poultry Book is just out. It is without exception the most wonderfully complete manual on the subject of successful poultry management ever written. The secret of how to raise every turkey hatched and the "Basley Formulas," now published for the first time, are worth many times the price of the book. The "Western Poultry Book" is a practical book by a practical woman. Price $1.00. Address Mrs. A. Basley, Box 77, Venice, Cal.

Hayes, R. B., Poultry Fancier and Rhode Island Red Specialist—30 breeding pens of Reds, 20 pens miscellaneous varieties. See our birds, they tell their own story, or write for circular. Eggs for sale only. Yards in Arroyo, opposite Ostrich Farm. Box 35, Garvanza Sta., Los Angeles, Cal. Phone East 1631.

LOVELL'S BLACK MINORCAS
California's
Greatest Egg Producers

Pedigreed, trapnested, scientifically bred Free circular. DAVID J. LOVELL, 5720 So Park Ave., Los Angeles, Cal.

Day-old Chicks from my pure bred and carefully selected stock of S. C. White Leghorns from January 15 to February 15, $10 per 100; after February 15th, $9 per 100. Spring orders taken now. J. R. Heinrich Poultry Yards, Arroyo Grande, Cal., San Luis Obispo County.

Columbian Wyandottes—Pedigreed winter layers. Bred for five years from best blood in United States. Eggs, $3 and $5 per 15, stock matter of correspondence. A. H. Memmler, Monrovia car to El Nogal, ½ mile south. Home phone, Alhambra 2064; address, San Gabriel, Cal., Box 299.

Magnolia Poultry Farm—S. C. White Leghorns (Wyckhoff stock). Vigorous, healthy birds, good layers, large, white eggs. Eggs, $2.00 per 15; $3.00 per 30; $7.50 per 100; $60.00 per 1,000. C. H. Hosford, 351 Magnolia ave., Riverside, Cal.

Schellville Hatchery—Thoroughbred Leghorns, Black Minorcas, R. I. Reds and Barred Plymouth Rock chicks hatched from heavy layers. Strong chicks and safe delivery guaranteed. Sonoma, Cal.

White Orpingtons—Finest utility stock on coast. Heavy layers. Eggs $5.00 per setting of 15; $25 per 100; baby chicks, 50c each. H. E. Dickinson, R. F. D. 1, Napa, Cal.

For Sale—Baby chicks. White Rocks, Barred Rocks and Rhode Island Reds. Am now booking orders. J. W. Lyon, Gardena, Cal.

Booking orders for day-old chicks at 12c for January delivery and later. White Leghorn eggs at $2.50 per setting, $6.00 per 100. Sussex Poultry Manor, Los Gatos, Cal.

BONNELL'S S. C. BLACK MINORCAS
WIN EVERY TIME

Eggs for hatching after Jan. 15th. C. C. Bonnell, State Vice-President American Black Minorca Club, 2919 Brighton Ave., Los Angeles.

I Hatch White Rocks Exclusively—Chicks $15 per 100 from a heavy laying strain of prize winners. I am booking orders now for later delivery. Can supply stock from 1 to 10 weeks old. Write for prices. J. Wesley Lord, Inglewood, Cal.

We are now booking orders for day-old chicks, White and Buff Orpingtons and R. I. Reds from thoroughbred stock. Very best winter layers. Vallejo Poultry Yards, 208 Frisbie St., Vallejo, Cal.

Petaluma Hatchery—Capacity 50,000 eggs. We are booking orders for spring. Write for circular. L. W. Clark, 615 Main St., Petaluma, Cal.

Eggs for Hatching—White and Buff Wyandottes from best strains. W. C. Parker, 113 Pacific Ave., Santa Cruz, Cal.

For Sale—White and Buff Wyandottes from best strains. W. C. Parker, 113 Pacific Ave., Santa Cruz, Cal.

Lodi Hatchery—Just hatched, White Leghorn chicks from healthy, heavy laying stock. Booking orders for later delivery. T. C. Hawley, 504 E. Elm St., Lodi, Cal.

Single Comb Brown Leghorn Eggs—$5.00 per hundred, $1.50 single setting. **Mrs** E. Foran, Box 445, Visalia, Cal.

Poultry Wanted—We pay the highest market price for all the local poultry we can get, no matter how large the quantity; also fresh ranch eggs. We remit immediately Allaway & Layton Co., 607 E. 3d St., Los Angeles, Cal.

Pacific Hatchery—Baby chicks, incubator eggs, and selected thoroughbred poultry, ranch raised. W. W. Clough, Ontario, Cal.

Orland Hatchery—Just hatched White Leghorn Chix. Booking orders for later delivery. P. L. Simpson, Box 13, Orland, Cal.

Baby Chicks and Eggs for Hatching—Orders now taken for January and later delivery of R. I. Reds (Tompkins Strain), White Minorcas and S. C. Black Minorcas (Northrup Strain). C. U. Chamberlin, Los Gatos, Cal.

INCUBATORS.

For Sale—Three 240-egg size, two 120-egg size. Machines all in good order. For particulars and price address X-Ray Ranch, Santa Rosa, Cal.

LAND FOR RENT.

For Rent—50-acre alfalfa ranch, good improvements, good location, $750.00 cash, $250 down and balance as hay is sold. H. F. Clark, 143 Chester Court, Hollywood. Phone Hollywood 2891.

MACHINERY.

For Sale—Second-hand windmills, tanks, engines, farm machinery that will do same work as new at half price. 140 ft. 2½-inch standard at 9½c; 10 ft. steel Star windmill, complete with tank and pump, $48; 12 ft. steel aermotor, steel tower, 6000 gal. tank, tank house, pump complete, outfit nearly brand-new for $115, cost $325. Small distillate tanks, 50 gallons up. Domestic and irrigating tanks, galvanized and 500 to 10,000 gallons, also 50,000-gallon tank, fine for storage. 5 fine stock tanks 8x3 ft. Steam engines with steam pumps; gasoline engines, 2 h. p. engine, pump jack, pipe, pump complete; also many other sizes. Gang, disc, road, riding, walking plows, feed rack, mower and rake, Fresno and slip scrapers, wagons, surrey, grading tools, sundries. Demmitt Co., upstairs, 120 N. Main, Los Angeles.

ENGINES.

For Sale Cheap—Avery thirty H. P. undermounted Oil Burning Steam Traction Engine. This engine is equipped with all approved time and labor-saving devices. It has been slightly used for experimental work only, and is warranted to be in first-class condition. Avery Cockshutt Plow—ten 14-inch steel bases, especially for this engine—will be sold cheap. It is brand new—has never been used. The Cockshutt Plow has won first prize at all international plowing contests for the last three years. Both engine and plow will be sold below factory cost, and we will be glad to mail you full description and prices. This is a real opportunity to buy a first-class outfit at big saving over the cost of inferior goods. Newell Mathews Company, 200 North Los Angeles St., Los Angeles, Cal.

For Sale—Recently secured 11 H. P. gas engine, now thoroughly overhauled. Want to sell before the first of year. Cash buyer can have this very cheap. Baillie & Brandt Co., 943-945 N. Main St., Los Angeles, Cal.

For Sale—25 H. P. Fairbanks-Morse distillate engine in first-class condition. Will guarantee for year. Machinery Exchange, Main & Bruno Sts., Los Angeles, Cal.

Business Notes

A FINE AUTOMOBILE.

The 1911 Moline shows a marked improvement in beauty of body, fenders, large 36-inch wheels, longer wheel base, in refinements both in outward appearance and interior construction, rather than radical changes.

The improvements offered in the Moline are: A long stroke motor, having a 4-inch bore and a 6-inch stroke. The wheel base has been increased to 112 inches, and the size of the wheels from 3½x34 to 3½x36. The new drop frame is another feature. This improvement adds materially to the grace and beauty. The double independent ignition system is another important improvement. The general enlarging of this season's model in the various features outlined above has naturally produced another very desirable change, that of a far more roomy, comfortable, luxurious and graceful body.

In the recent 1000-mile reliability run held in Chicago but three cars out of twenty-nine starters finished with perfect road and technical scores, two of these were Molines, thereby winning the team trophy and tying for the Van Sicklen cup.

Mr. William Gregory, agent for the Moline, is probably the only dealer in Los Angeles who has sold the same make of car for nine continuous seasons, having handled the Moline car since 1903.

YAQUI VALLEY.

Much attention is being attracted to the rich lands of Mexico, and sub-divisions are being made which offer opportunities for the pioneer. In the famous Yaqui Valley on the west coast of Mexico, 260 miles south of the American border, is an exceptionally fine offering of rich land. Bordering on the Gulf of California, it has certain vital advantages in soil, water, markets, transportation, and price of land. The water for irrigation is obtained from the Yaqui River and is conducted to the lands by thirty miles of canal and over 300 miles of lateral ditches.

This valley is producing some remarkably fine wheat, barley and oats. Forty-five bushels of wheat per acre have been harvested. But better than these products is the promise that cotton, onions, cantaloupes, watermelons, sugar cane, oranges and lemons, and practically all kinds of fruits and vegetables will do magnificently. We cannot give full particulars, but may mention that the lands are held at $25 per acre, including the water. Still better, the terms are made very easy. Fuller particulars may be had by addressing Chas. F. O'Brien, General Land Sales Agent, 112 W. Sixth St., Los Angeles.

Mr. H. P. Matthews, who is advertising gypsum, lime and manure in this issue, has a standard grade of material which cannot help but give results if intelligently applied. Mr. Matthews has traveled up and down the state and is known to many of our readers, who will be glad to extend to him their patronage. In recent years Mr. Matthews has been connected with the leading land plaster and gypsum houses on the coast, and being a soil and fertilizer chemist he is in position to give the very best of assistance in questions of fertilization. A letter to Mr. Matthews will bring information which will be of value.

One of the most interesting exhibits at the recent Thermal fair were perfect bunches of dates produced on the government experimental grounds at Mecca.

Household Department

HUMOR.

Laughter and Sadness, though opposite moods,
  Courted and married, a long time ago,
And from this union of antipode souls,
  Only one offspring, quaint Humor, can flow.

Laughter comes smiling, and opens the way,
  Sadness then follows, and drops in her part,
And this commingling of teardrops and smiles,
  Creates an urchin that captures the heart.

Tenderness beams from his sweet roguish eyes,
  Love sets her seal on his innocent brow,
And to his sceptre of health-giving fun,
  Savant and priest, and the laity bow.

Long may he flow from this God-given source,
  Mingling emotions of sadness and mirth,
Harmless in being, with tenderness rife,
  Offspring of innocence—salt of the earth!

—Farm and Ranch.

THE MAN OF MANY DEATHS.

Thus spoke the old captain:

"Yes, gentlemen—before God I swear it—on the twenty-eighth of February, 1871, of a Saturday, the last day of the siege of Paris, I stood, for the fourth and last time, face to face with a Prussian officer whom I had thrice seen die, under entirely different conditions."

We made no effort to conceal our doubt of this story.

"Here you have the story. We were in camp at Fort Mont Valerien; General Noel was in command, and no day passed without a skirmish with the enemy. A few days before the encounter at Bourget, while reconnoitering toward Longboyau, we heard in the woods the tramping of horse, and the rhythmic sound of cavalry on the march. At a sign to my men, we dropped flat in the shrubbery on the Bueil road, and waited.

"Presently, the enemy emerged from the wood, moving quietly, two abreast.

"At the side rode an officer, a tall, well-grown fellow with a blonde mustache and a handsome, proud face. I was considered a good shot in the regiment, and my men whispered:

" 'Now is your chance, Sergeant!'

"I closed my eyes involuntarily and fired. When I dared to look, I saw men and horses rising and falling in confusion, and many soldiers crashing through the woods at a gallop. The officer lay on the ground at full length. How immensely tall a dead man looks! I gazed at him long and attentively, not without a shudder, and I felt that never in all my life could I forget that face.

"A few days later I was on furlough in Paris, and I used the opportunity to ask after one of my friends, Lieutenant Legras, who had been wounded at Bondy, and who was in the hosiptal at Val-de Grace. During our chat, I noticed at a cot near us the vague whispering and meaning glances which tell of expected death. The doctor came, bent for a moment over the occupant of the cot, and signed to the two Sisters of Charity in attendance, who dropped on their knees in prayer.

"Legras whispered in my ear: 'A Prussian officer who is going to hand over his sword; he has been two days dying.' I looked toward the bed; at the same instant the sufferer raised himself partly up in a struggle for breath, and as he fell back dead, I began to tremble like a leaf, and the ashen pallor of my face startled Legras.

"It was the corn-blond German hero whom I had shot down on the Bueil road, who lay dead in the hospital cot.

"The answer to my inquiry was to the effect that the dead man was a Prussian captain who had been picked up gravely wounded on the field near Bondy, two days previously—therefore it could not be the same officer who a week before had fallen, pierced by my bullet.

"Day and night my excited brain sought in vain an explanation of this mystery, till the battle of Montretout turned my thoughts into a new channel.

"We were pushing toward the Chateau of Buzanval, when I picked out with my field-glass a group of Prussian staff-officers, among whom two figures stood out boldly, probably the leaders of the sortie. Suddenly on our left flank was revealed three squadrons of the enemy, dashing pell-mell upon us in a mad gallop. At the head of the enemy's attack was the undying dead officer of Longboyau and Val-de-Grace. Straight as a dart he bore down upon me, swinging aloft his gleaming saber. I fired upon him, and the next moment found myself rolling under my assailant's riderless horse. As soon as I could regain my feet, I sprang upon the body of the fallen Prussian, which lay near me, and (I confess freely what was perhaps an act of fiendish revenge) I plunged my bayonet deeply three times in the lifeless breast of the man who had become a hideous nightmare.

"He was surely dead now, was he not?

"Then came the days for the signing of our truce.

"I was on the outworks when the parliamentary signal was blown. A Prussian officer approached me, followed by a corporal. As the tall, stately figure drew nearer, it seemed as if every drop of blood in my body was turning to ice. The blue gleam of the eye, the gold-blond color of the long mustache, the whole expression of the face, at once forceful and dreamy. He it was again, my haunting vision, my three times fallen Germanic hero—the same whom only eight days before my bayonet had pierced through and through.

"Motionless, silent, I watched him, overwhelmed with the conviction that the Prussians could not die, as we died—but that they rose from the dead after each conflict, to fight us anew.

Noticing my gaze fixed upon him, the Prussian said, in a gentle voice:

" 'It is a mercy, sir, that this cruel conflict has come to an end. Your resistance was admirable, and very fatal to our side. As an individual I can speak feelingly; of four brothers of my family who fought before Paris, I am the only one to survive.' "—Universal Magazine.

The man who is willin' to give a good day's work fur a good day's pay is purty apt to allus hev a good day's work comin'.

Mayer SPECIAL MERIT SCHOOL SHOES

These shoes are built exceedingly strong. The leather is tough and the soles are selected from the best wear-resisting hides. They are the only school shoes made with two layers of leather over the tip.

"WEAR LIKE IRON"

MAYER SPECIAL MERIT SCHOOL SHOES outlast average school shoes two to one and cost no more. They are good looking shoes, built to fit and comfortable to wear.

The Genuine Special Merit School Shoes have the Mayer Trade Mark stamped on the sole.

FREE—Send us the name of a dealer who does not handle Special Merit School Shoes, and we will send you free, postpaid, a handsome picture of George Washington, size 15x20.

We also make *Honorbilt* Shoes for men, *Leading Lady* Shoes, *Martha Washington* Comfort Shoes, *Yerma* Cushion Shoes and *Mayer Work* Shoes.

Special Merit

F. Mayer Boot & Shoe Co., Milwaukee, Wisconsin Trade Mark

WESTERN BRANCH: Washington Shoe Mfg. Co.—Seattle, Wash.

ENTERPRISE
Bone, Shell and Corn Mill

A money-saver and money-maker. Cracked grain, ground bone and shell, increase egg production when fed properly. The "ENTERPRISE" Mill is a wonder. Strongly built, reliable, runs easily and won't get out of order. Grinds dry bones, corn, oyster and other shells, etc. Price of Mill shown, No. 750, is $9.50. Weight, 60 lbs. Grinds 1¼ bushels of corn an hour. Hardware and general stores everywhere.

Catalogue FREE. Famous Recipe Book, "The Enterprising Housekeeper," for 4 cents in stamps.

THE ENTERPRISE MFG. CO. OF PA., DEPT. 61, PHILADELPHIA, PA.

No. 750 Price $9.50

For Dry Bones etc.

Pioneer ROOFING

Looks Better—Lasts Longer—Costs Less

If you want the maximum of roofing service at a minimum cost, be sure you specify "Pioneer Roofing." It's better from the beginning and cheaper in the end. Sunproof and rainproof. Needs no paint or repairs. Comes in convenient rolls with everything necessary for laying.

Let us send you samples and prices. Also 32-page illustrated Roofing Booklet. Address Department 11

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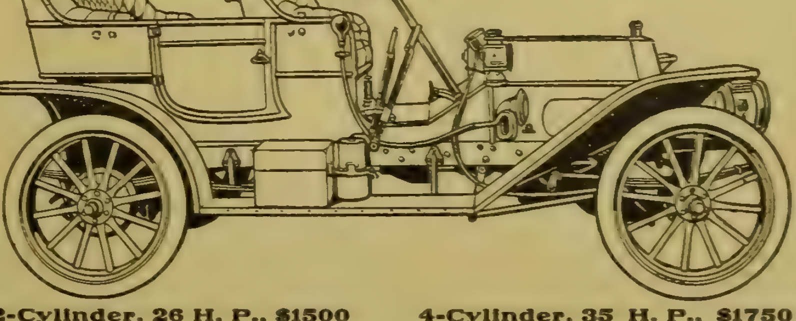
DURORCAR The Car for the Farmer



2-Cylinder, 26 H. P., $1500 4-Cylinder, 35 H. P., $1750

Made in Los Angeles and factory open to your inspection. Come and see us.

Both Phones Durocar Mfg. Co., 935 S. Los Angeles St. Los Angeles, Cal.

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Fifth Floor Hamburger Bldg., Los Angeles—100 feet above street-noise and dust.
Entire year—enter any time. Catalogue—27th year. F 1850. Main 2305. Edward King Isaacs, Pres.

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THE OPEN WINDOW WINTER WAY EAST

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A MAGNIFICENT ELECTRIC LIGHTED TRAIN OF UNSURPASSED COMFORT; SOUTHERN PACIFIC DINING SERVICE (THE STANDARD OF THE WORLD); SPACIOUS OBSERVATION CAR.

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AVERY THIRTY H. P. UNDERMOUNTED

OIL-BURNING STEAM TRACTION ENGINE

☞ FOR SALE CHEAP

⁂

This Engine is equipped with all approved time and labor-saving devices. It has been slightly used for experimental work only and is warranted to be in first-class condition.

AVERY COCKSHUTT PLOW—ten 14-inch steel bases, especially for this engine—will be sold cheap. It is brand new—has never been used. The Cockshutt Plow has won first prize at all international plowing contests for the last three years.

Both Engine and Plow will be sold below factory cost, and we will be glad to mail you description and prices. This is a real opportunity to buy a first-class outfit at big saving over the cost of inferior goods.

⁂

Newell Mathews Company

200 North Los Angeles St. LOS ANGELES, CAL.

Farm Lands in Mexico

For agricultural, horticultural, and gardening purposes.
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GROWING OLD.

Your eyes may fail and your limbs grow weak, and the blood in your veins run cold; deep lines may furrow your sunken cheek, and your heart, that was strong and bold, may do its work with a feeble beat; the road may weary your stumbling feet; you may sigh for friends that you'll no more meet—but that isn't growing old. The years may number four score or more that over your head have rolled; you may hear the wash on the other shore of the waves that are dark and cold; while your brain is keen and your soul is strong and your heart is full of a hopeful song, you still are one of the youthful throng, and years will not make you old. When your voice is harsh and your words are mean, as you sit by the fire and scold, and your mind is fat and your heart is lean and your thoughts are blue with mold; when you bring to the breasts of the children fears, and bring to the eyes of women tears, it is not needful to count your years—we know you are growing old.—Walt Mason, in The Grange.

TO SWEETEN THE BREATH.

A bad breath is inexcusable. A number of conditions, which I will consider can give a bad breath but in the first place I would say that no one should breathe into another's face so that the condition of the breath is made known. It is entirely unnecessay to do so. The breath is something that should never be given or taken. Children should be taught this as soon as they can understand anything. When close to another in conversation turn the head a little one side, or stand back so that the current of air coming from the mouth will not strike the face. A little practice will show how easily this can be accomplished. In the next place, you can tell for yourself whether your breath is sweet or not by sending it up toward the nose so that you can smell it. The most common cause for a bad breath is indigestion, especially a nervous indigestion. The food remains in the stomach without being digested, and decays, giving rise to noxious vapors, which make a malodorous breath. Constipation is another great cause of bad breath, and should be corrected either by a laxative diet and eating fruit or by the use of some aperient. A fourth of a teaspoonful of bicarbonate of soda, taken in a half glassful of water before each meal, will help correct the kind of indigestion that gives a bad breath. The bicarbonate of soda granules, that you can obtain at any druggist's, are good for this purpose, and are excellent for the teeth, as they dissolve in the mouth. Charcoal tablets are also good, one taken after meals, in the same way.

The condition of the teeth and mouth will give rise to a foul breath. Cheese-like substances gather in the tonsils, caused by the over-secretion of the glands of which they are composed; they decay and give a bad odor to the breath. These deposits can be seen when you examine the tonsils with a hand-glass, and they can be pressed out by means of a toothpick, the point of which should not be too sharp. They can also be removed by the use of an antiseptic gargle for the throat. For the teeth to give a bad odor to the mouth they must be in a very advanced state of decay, or must indeed by very badly neglected. The breath is rendered very offensive by certain edibles, notably cheese and onions. The combination of beer and

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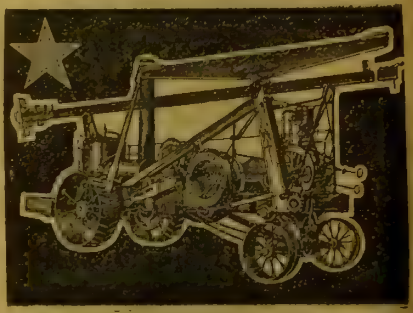

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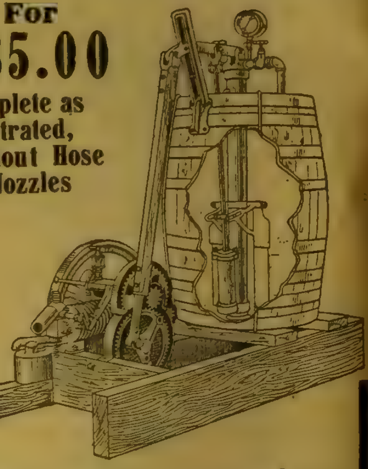

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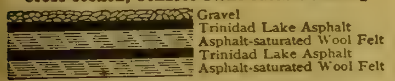

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cheese is one that will make all but the partaker suffer, when in close proximity to him or her. It is a pity that onions make such a disagreeable condition of the breath, as they are very healthful if thoroughly cooked. Sometimes the use of pastiles or charcoal tablets will sweeten the breath so that the odor will not be perceived.

The breath may be rendered foul by the condition of the nose, occasioned by catarrh, which should be corrected. If the inflammation of the nose has continued for a long time, so that it attacks the bones, the odor is one of the most penetrating and nauseating imaginable. Since the more general use of antiseptic sprays this odor is not so often met with, as by the use of these it can be kept down. The saturated solution of boric acid is excellent for those troubles of the mouth and nose. One should have a good spray and spray the nose, mouth and throat thoroughly night and morning, as much as one would brush the teeth. The Ladies' World.

SOME MEASUREMENTS.

A young housekeeper who was poring over the pages of a cook book asked earnestly: "Is it my fault or the book's that I fail in cooking certain things?"

Upon the first page, in black-faced type, under the head of general directions, was the following: "Use two rounded teaspoonfuls of baking powder to every quart of flour." Upon the very next page, under another heading, appeared these words: "The general rule of proportion is two heaping teaspoonfuls of baking powder to every quart of flour."

The preparation of a dish is a chemical experiment, and to get perfect results, definite proportions must be used. The chemist is accurate to the drop or the grain. The cook should be equally careful.

If the rounding and the heaping teaspoonful were measured accurately, they would make, respectively, two and four level teasponfuls. But not one person in a hundred would be able to measure them accurately. That being true, why not do away with all guesswork and adopt a basis of measurement which will be the same every time and in the hands of every person?

The level measurement at once suggests itself. To measure a spoonful of dry material, such as flour, dip in the spoon, lift it heaping, and level with the side of the knife, the cutting edge of knife moving toward tip of spoon. The half spoonful is measured by dividing the level spoonful in half, lengthwise. For the fourth, cut the half crosswise. In measuring by the cup it is not sufficient that the same cup be used for measuring everything; if a large coffee cup is used for measuring flour when following a recipe, the result is apt to be too much flour for the given amount of leavening (baking powder) and shortening. The use of a teacup would give too little flour in proportion to the other ingredients. The standard measuring cup, containing one-half pint, should be the only cup used. It is marked off in halves, thirds and quarters, and can be had in tin or glass. The cost is nominal—five cents at the most.

Instead of measuring a third or fourth of a cup, it will often be easier and quicker to use a tablespoon.

Table of Measures.

3 teaspoonsful equals 1 tablespoonful.
16 tablespoonfuls equals 1 cupful.
8 tablespoonfuls equals ½ cupful.
4 tablespoonfuls equals ¼ cupful.
1 wineglassful equals ¼ cupful.
1 gill equals ½ cupful.
1 cupful equals ½ pint.
2 cupfuls equals 1 pint.

Equivalent Measures and Weights.

4 cupfuls flour equals 1 pound.
2 cupfuls granulated sugar equals 1 pound.
2⅔ cupfuls powdered sugar equals 1 pound.
2⅔ cupfuls brown sugar equals 1 pound.
4⅓ cupfuls coffee equals 1 pound.
2 cupfuls butter equals 1 pound.
2 cupfuls chopped meat (packed) equals 1 pound.
1 square Baker's chocolate equals 1 pound.
2 tablespoonfuls butter equals 1 ounce.
2 tablespoonfuls sugar equals 1 ounce.
4 tablespoonfuls flour equals 1 ounce.
⅓ cupful chopped nuts equals 1 ounce.

PINEAPPLE PUDDINGS.

Almost any of the excellent puddings usually made with apples can be made with pineapple with very decided gain in flavor as well as in novelty. The desert, which made with apples is ordinary and commonplace, may be transformed into an unusual and more elegant dish by simply substituting pineapple.

Pineapple "Brown Betty"

Fill a baking dish with alternate layers of buttered bread sprinkled with sugar and grated pineapple, letting the top layer be of the bread with an extra spreading of butter. Cover with a plate and bake in a slow oven, adding a little water if it seems to dry out. Remove the plate, brown the top and serve with "fairy butter," which is nothing but butter and powdered sugar beaten together until they foam. In cool weather a very little boiling water is necessary to make the fairy butter.

Pineapple Biscuit Pudding.

Butter individual baking cups and drop into each a large spoonful of grated or crushed pineapple. On this place a tablespoonful of soft biscuit crust, leaving plenty of room for the dough to rise in steaming. Cover the cups closely and steam in a kettle of water for about an hour. Turn out on plates and serve with any preferred sauce.

Pineapple Sponge Pudding

Cover the bottom of a buttered baking dish with a layer of crushed or grated pineapple and pour over it a sponge cake batter made by any recipe which has proved reliable. Bake until the batter leaves a broom straw clean. Serve with or without a sauce. It is good enough without.

HOW "THON" WOULD WORK.

"Thon" is the word which has been suggested for use as an English pronoun of common gender, a luxury which the English languauge has thus far had the fortitude to forego. It was considered suitable for English because it came from the Greek. Its use may be illustrated as follows:

If a parent desires to spank thon's (his or her, as the case may be) child, thon (he or she) should take thon (him, her or it) across thon's knee. Then thon should remove thon's slipper, and after explaining to the child the reprehensibility of thon's conduct, thon should apply the slipper to that portion of thon's anatomy which from time immemorial has been dedicated to that purpose.

It may easily be seen from the above how "thon" effects great clarification. —Lippincott's.

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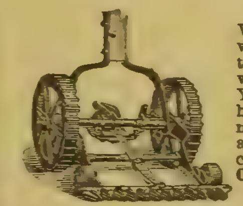

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San Francisco and Los Angeles Produce Markets

Los Angeles Markets

LOS ANGELES, Dec. 14, 1910.

Butter.

The butter market is firm, and reported at this time the best butter market in the United States. Elgin is now quoted at 30c.

Prices to trade 2½c in advance of the following Produce Exchange quotations:

Extras	36½
Firsts	32½
Elgin	30
Cooking	25

Cheese.

Local	18
Northern, fresh	18@18½
Oregon Daisy	18@18½
Imported Swiss	32
Domestic Swiss	21@24

Eggs and Poultry.

With storage in good supply and coming out at 28@30c, fresh ranch has declined 4c. Market not strong.

Paying price f. o. b. Los Angeles is:

Local ranch candled	42
Case count buying price	38
Eastern fresh	36
Eastern storage	30
Seconds	28

Dealers pay for live poultry f. o. b. Los Angeles:

Hens, per lb	20
Roosters	12
Fryers and roasters	18@20
Broilers	22@23
Turkeys	21@22
Ducks	17
Geese	12
Squabs, per doz	1.75

Live Stock.

The following quotations are f. o. b. Los Angeles on all stock:

Hogs, 175 to 200 lbs	8
Prime steers	6
Heifers	5
Calves, per lb	6½
Sheep, ewes, per head, shorn	5.00
Lambs, per head	3.75@4.25
Wethers, shorn	5.00

Potatoes.

Wholesale prices are:

Highlands	1.85
Salinas	2.00
Lompoc	2.00
Oregon, Early Rose	2.00
White Rose local	1.50@1.65
Sweets, yellow, per ctl	2.00@2.35

Onions.

Wholesale quotations:

Australian Browns	1.75
Oregons	1.85
Silverskins	3.00
Nevadas	1.85
Onions	2.00
Garlic	8@10

Vegetables.

Wholesale quotations:

Artichokes, northern, doz	1.25
Beets, sack	90
Beans, Lima	8
Beans, green	8
Beans, wax	8
Brussels sprouts	10
Bell peppers, lb	6@7
Green chilis	3@4
Cucumbers, per box	1.25
Cabbage, per sack	70@75
Celery, crate	2.50
Cauliflower, crate	1.50
Carrots, per sack	90
Egg plant, per lb	6@7
Horseradish	12½
Onions, green, per doz. bunches	25
Leeks, per doz	40
Lettuce, crate	1.25
Oyster plant, doz	40
Okra, lb	10
Peas, lb	8@10
Parsley, doz bunches	20@30
Parsnips, doz. bunches	40
Pumpkins, lb	1@2
Radishes, doz. bunches	20@25
Rhubarb, Crimson Winter, lb	6
Spearmint, doz. bunches	30@35
Spinach, doz	20
Hubbard squash, lb	2
Summer squash	75
Tomatoes, lug	75@85
Turnips, sack	90
Watercress	20@25

Citrus Fruits.

Navels	2.00@2.50
Grapefruit	2.50@4.00
Lemons	2.50@3.00
Tangerines	1.75

Fresh Fruits.

Wholesale prices on the market are:

Alligator pears	4.00@5.00
Apples, Belleflower	1.00@1.25
Spitzenbergs	1.75@2.50
Jonathans	2.25@2.50
Greenings	1.10@1.25
Pearmains	1.10@1.25
Pippins	1.10@1.50
Pineapples	8
Casabas, doz	2.00@2.25
Grapes, lug	1.25@1.50
Mangoes, lb	10@15
Persimmons, lb	5@7
Pomegranates, lug	1.00
Guavas, basket	6@7
Pears, lb	5
Bartletts	2.50
Strawberries	12@14
Blackberries	8@10
Raspberries	8@9
Watermelons, lb	2
Christmas melons	2.50

Dried Fruits.

Wholesale prices are:

Apricots	12
Evap. apples, fy., per lb	10½@11½
Figs, box	1.65
Peaches	6½@7½
Nectarines	10
Pears	10@12
Prunes	7@11
Plums	10

Beans, Dried.

Wholesale quotations:

Limas	5.00@5.25
Black eyes	5.50
Pinks	6.00
Lady Washington	4.25
Small white	4.00@4.25
Garvanzas	4.50
Lentils	7.00

Nuts.

Wholesale quotations are:

No. 1 soft shell walnuts	16@17
No. 1 hard shell walnuts	14
No. 2, all kinds	11
Chestnuts	12
Filberts	15
Almonds, IXL, lb., new	16@17
Pecans, polished	15@17
Peanuts, Eastern	7@7½
Peanuts, California	6

Honey.

Wholesale quotations:

Extracted water white	9½
Extracted light amber	8
Comb water white	18@19
Light amber	15
Beeswax	30

Hay.

Buying prices f. o. b. cars Los Angeles are:

Barley hay	13.00@14.00
Wheat hay	14.00@15.00
Tame oat	14.00@15.00
Alfalfa	12.00@13.00

Grain.

Wholesale selling price f. o. b. Los Angeles:

Wheat, new, ctl	1.80@1.85
Corn	1.60
Popcorn	3.50@4.00
Egyptian corn	1.75
White oats	1.80
Rye seed	2.00
Seed barley	1.25

Feed Stuff.

Wholesale selling price f. o. b. Los Angeles:

Alfalfa meal	1.10
Cracked corn	1.65
Cracked wheat	1.95
Shorts	1.80
Bran	1.55
Oil cake meal	2.50
Feed Meal	1.70
Rolled barley	1.20

San Francisco Markets

SAN FRANCISCO, Dec. 13, 1910.

Butter.

The market is easy on butter, with a steady decline during the past week, with a total loss of 3c during the week. Supply is ample.

Price to trade 2½c in advance of the following Produce Exchange quotations:

California extras, lb	32½
California firsts	30½
California seconds	27
Storage	30½

Cheese.

California flats, new	13@16½
Cal. Young America, fy., new	16½@17
Oregon, fancy	16

Eggs and Poultry.

Eggs are weak, with a drop being noted on Saturday and Monday, making a 2c loss.

Official quotations of the San Francisco Wholesale Dairy and Produce Exchange are:

Fresh ranch extras	40
Firsts	39
Seconds	33
Storage	32

Hens, doz	4.00@10.00
Fryers, doz	4.50@5.50
Ducks	6.00@10.00
Broilers	3.00@4.50
Roosters, doz	4.50@7.50
Turkeys	20@23
Geese	2.00@3.00
Pigeons	1.50@2.00
Squabs	3.00@3.50

Live Stock.

San Francisco prices, gross weight:

Steers	4¼@5¾
Cows and heifers	3½@4¾
Calves, lb	4½@6¼
Hogs	5@8
Milk lambs, unshorn	6@6¼
Wethers, No. 1	4¾@5
Ewes, No. 1	4¼@4½

Potatoes.

Wholesale market quotations:

River White, cwt	1.40@1.50
Salinas Burbanks, cwt	1.70@1.85
Oregon Burbanks, cwt	1.50@1.65
Sweets, ctl	2.70@2.90

Vegetables.

Wholesale quotations:

Artichokes	25@40
Beans, string, lb	8@12½
Cucumbers, hothouse, box	2.00@2.25
Celery, crate	1.50@1.75
Chili peppers, lug	40@60
Egg plant, lb	8@10
Okra, box	40@60
Peas, lb	7@9
Summer squash, box	75@1.25
Rhubarb, box	75@1.25
Tomatoes	75@1.25
Garlic, lb	2½@3

Onions.

Onions, California, sack	1.00@1.15

Citrus Fruits.

Navels, new	1.50@3.50
Grapefruit	1.50@3.00
Lemons	1.50@3.50
Limes	2.00@4.00
Tangerines	75@1.75

Fresh Fruits.

Apples, box	50@85
Apples, Belleflowers	90@1.00
Newtowns	75@1.25
Bananas, Hawaiian	1.00@1.50
Grapes	1.00@1.50
Huckleberries, lb	7@10
Pears, Bartletts	1.50@2.00
Winter varieties	60@1.00
Persimmons, box	50@75
Pineapples, Hawaiian	2.00@3.50
Pomegranates	50@1.50
Strawberries, chst	4.00@7.00

Dried Fruits.

FRUITS—1910 crop, f. o. b., carload lots, per lb.: Apples, 8½@9¾c; apricots, 10¾@13c; do, Moorparks, 14c; peaches, 5½@7c, with a premium of ⅛@¼c on Muirs; prunes, bulk basis, Santa Claras, 6¼@6½c, with ¼c premium on 60s to 90s; outsides, 6@6¼c; figs, 6¼@7c for white, and 5@5½c for black; pears, 9¾@13c.

RAISINS—1910 crop: London layers, in 20-lb. boxes—6-crown clusters, $2.50; do, 5-crown, $1.75@2; 4-crown, $1.30@1.40; 3-crown layers, $1@1.10; do, 2-crown, 95½c@$1. Seeded, per pkg.—Fancy, No. 16, 5¼c; choice, No. 16, 4¾@5c. Loose Muscatels, in 50-lb. boxes—Standard, 4-crown, 4½c; do, 3-crown, 4c; do, 2-crown, 3½c. Dried grapes, 3c. Seedless—Muscatels, 3½c; Sultanas, 4½c; Thompson's, 4¾@5c.

Nuts.

Walnuts, No. 1 soft shell	15
Walnuts, No. 1 hard shell	14½
Almonds, '10 N P U	13
Almonds, '10 Nonp	15
Almonds, '10 I X L	14
Almonds, Peerless	12
Pecans	14@17
Chestnuts, California	6@8

Beans, Dried.

Limas	4.70
Pink	5.50
Black eyes	5.50@5.65
Small white	3.50@3.65
Large white	3.50@3.60
Kidneys	5.65
Garvanzas	3.25
Bayo	5.25
Horse beans	2.00
Red Mexicans	5.50
Cranberry	4.50@4.75

Hops.

Hops, coast, 1910	12½@17½
Hops, Oregon	12@15
Hops, 1909	10@13

Honey.

Water white comb, '10	15
Dark comb	12½
Extracted white	8
Extracted dark	6½
Beeswax, lb	24@30

Scott, Magner & Miller say:

Receipts of hay on the San Francisco market for the week ending today have been 1,750 tons. This amount is largely below our normal consumption, and about one-half of what usually comes in at this period of the season during the same length of time.

There has been no alfalfa hay coming into the market recently, and the city stocks are being drawn on to fill current trade requirements. The feeling on this article is firmer, although not definitely or quotably higher.

There has practically been no straw coming in at all lately, as there has been no demand for this article.

We quote the wholesale prices in round lots on today's market as follows:

Fancy wheat	12.50@13.50
No. 1 wheat or wh and oat	10.50@11.50
No. 2 wheat or wh and oat	9.00@10.00
Choice tame oat	10.50@11.50
Other tame oat	8.00@9.50
Wild oat	8.00@9.00
Stock hay	5.50@6.50
Alfalfa, ton	9.00@11.00
Straw	40@50

Grain.

Wheat, No. 1	1.42½@1.50
Barley, fancy	1.07½@1.08¾
Barley, good to choice	1.03¾@1.06¼
Barley, poor to fair	97½@1.02½
Oats, white	1.45@1.55
Rye, new crop	1.50@1.55
Alfalfa seed	18@20
Mustard, brown	4½
Millet	2¾
Flaxseed	5@5½
Broom corn seed, ton	23.50

Feed Stuff.

Bran, ton	30.00@32.00
Feed cornmeal, ton	35.00@36.00
Cracked corn	35.00@36.00
Ground barley, ton	21.50@23.50
Rolled oats, ton	29.00@31.00
Middlings	34.00@36.50
Oil cake, ton	40.00@41.50
Cocoanut cake, ton	25.00
Mixed feed, ton	25.00@27.00
Shorts	31.00@32.50

Citrus Market

LOS ANGELES, Dec. 14, 1910.

Notwithstanding exceptionally heavy shipments, the fruit which has gone forward has been taken at fair prices. The market is exceptionally strong, and the promise is that all holiday offerings will be picked up at very satisfactory prices. In view of the exceedingly large output, this is very gratifying, and it is probable the shipments during the holidays will not shrink as they have in past years. This is due largely to the ripeness of the fruit.

Lemons are meeting with a better demand. This is caused in part by the lower price which has prevailed and the exceptionally high quality of raw fruit offered.

Shipments.

Total shipments of oranges since November 1 to date, 1,676 cars; of lemons, 561; making a total of citrus fruits for the season of 2,237 cars.

NEW YORK, Monday, Dec. 12.—Eleven cars navels, four cars lemons. Market strong on navels, lower on lemons. Fair seasonable weather.

NAVELS—	Avge.
Royal Kinght, R H, Redlands	2.60
Watchumna, imp, C C Ex	3.05
Watchumna, C C Ex	2.70
Crocus, imp, S B Ex	3.15
Cosmos, imp, S B Ex	3.00
Crocus, S B Ex	2.95
Watchumna, C C Ex	2.95
Pioneer, spl, Pioneer Fruit Co	2.35
Hetch-Hetchy, Pioneer Fruit Co	2.20
Pride of the West, Pioneer F Co	1.85
Carmen, x fy, Randolph Fruit Co	1.80
Royal Crest, fy, Stewart Fruit Co	2.20
Winter Haven, fy and ch, Stewart Fruit Co.	1.95
Gobbler, fy, or, Stewart Fruit Co	1.90
Mariposa, fy, Earl Fruit Co	2.65

Lemons—Naralimo, $3.50; Circus, $2.35; Pet, $2.80; Southland Beauties, $5.00; Justrite, $2.75; Quail, $2.80; Coyote, $2.40.

CHICAGO, Monday, Dec. 12.—Lemons easy and slow sale. The supply is good. Boxes, California fancy, 300s, 360s, $3.00@3.25; extra choice, 25@50c per box discount.

California oranges are quoted at easy for large sizes and firm for smaller fruit. Receipts are reasonably heavy. Some show decay and have to be repacked. Boxes, navels, California 96s, $2.25; 126s, $2.50; smaller sizes, $2.75@3.00.

CLEVELAND, Monday, Dec. 12.—Three cars navels and one car lemons sold. Market higher on navels, unchanged on lemons. Snowing.

NAVELS—	Avge.
Sentinel, C C Ex, Lindsay	2.50
Ben Hur, R H Ex, Redlands	2.75
Symbol, ch, Stewart Fruit Co	2.25
Royal Knight, R H Ex, Redlands	3.05
Newsboy, R H Ex, Redlands	2.00
LEMONS—	**Avge.**
Watchumna, C C Ex, Lemon Cove	3.05

PITTSBURG, Monday, Dec. 12.—Six cars sold. Market firm on navels, stronger on lemons. Cold.

NAVELS—	Avge.
Fullvalue, T C Ex, Naranjo	1.60
Fullvalue, t i, T C Ex, Naranjo	2.00
Pride of the West, Pioneer F Co	2.45
Green Dolphin	2.60
Pride of the West, Pioneer F Co	2.00
Naranjo, T C Ex, Naranjo	2.25
Hetch-Hetchy, Pioneer Fruit Co	2.70
Birchbark	2.60
Hetch-Hetchy, Pioneer Fruit Co	2.20
LEMONS—	**Avge.**
Airship, V C Ex, Fillmore	2.80
Oriole, V C Ex, Fillmore	2.45

PHILADELPHIA, Monday, Dec. 12.—Three cars navels and two cars lemons sold.

NAVELS—	Avge.
Blue Label, C C Ex, Lindsay	2.50
Marguerite, x ch, Earl Fruit Co	2.35
Pride of the West, Pioneer F Co	2.30
Hollywreath, fy, Earl Fruit Co	2.50
Hetch-Hetchy, Pioneer Fruit Co	2.35
LEMONS—	**Avge.**
Airship, V C Ex, Fillmore	2.45
Hetch-Hetchy, Pioneer F Co	2.65
Oriole, V C Ex, Fillmore	2.30
Pride of the West, Pioneer F Co	2.40

Thirty cars Floridas sold. Oranges, $1.00@2.40; average, $2.10. Grapefruit, $1.05@3.85; average, $2.15. Tangerines, $1.40@2.40; average, $1.70. Market lower on grapefruit, unchanged on oranges.

ST. LOUIS, Monday, Dec. 12.—Colder. Market strong on navels, lower on lemons on account weather. Twenty-five cars navels, one car lemons sold.

NAVELS—	Avge.
State, T C Ex, Lindsay	2.60
Braeside, Riverside Ex, Riverside	2.55
Pride of the West, Pioneer F Co	2.55
Oakleaf, T C Ex, Porterville	2.55
Hetch-Hetchy, Pioneer Fruit Co	2.60
Foothill	2.60
LEMONS—	**Avge.**
Tulip, T C Ex, Porterville	2.50
Housewife, Riv Ex, Riverside	2.20
Gavilan, Riverside Ex, Riverside	2.70

BOSTON, Monday, Dec. 12.—Nine cars sold. Weather clear and cold. Market doing better on both oranges and lemons.

NAVELS—	Avge.
Watchumna, C C Ex, Lemoncove	3.00
Homer, Q C Ex, Corona	3.10
Cosmos, S B Ex, Yerkes Spur	2.80
Hollywreath, fy, Earl Fruit Co	2.30
Blue Label, C C Ex, Lindsay	2.80
Crocus, S B Ex, Yerkes Spur	3.20
Pioneer, spl, Pioneer Fruit Co	2.55
Marguerite, x ch, Earl Fruit Co	2.15
LEMONS—	**Avge.**
Watchumna, C C Ex, Lemoncove	3.25
Tunnel, S T Ex, Fernando	2.65
Sunrise, sd, Earl Fruit Co	2.55
Rey, S T Ex, Fernando	3.25
Marguerite, x ch, Earl Fruit Co	3.00

CINCINNATI, Monday, Dec. 12.—Cold. Market declining on lemons, steady on oranges. Two cars lemons, ten cars Floridas sold.

LEMONS—	Avge.
Trail, A C G Ex, Lamanda Park	3.15
Our Beauty, A C G Ex, Lamanda Park	2.10
Loma, ch, Limoniera Co	2.95
Canyon, A C G Ex, Lamanda Park	2.80
Bridal Veil, o r, Limoniera Co	2.80
White Cross, Limoniera Co	2.20

Florida Brights, $1.85@2.50; Russets, $1.60@2.60.

NEW YORK, Tuesday, Dec. 13.—Nine cars navels, one car Arizonas and one car lemons sold. Market higher on good stock navels, lower on poor grades, unchanged on Arizonas, and higher on lemons. Weather fair. Cold.

NAVELS—	Avge.
Winter Haven, fy and ch, Stewart Co.	1.80
Royal Crest, fy, Stewart Co	1.90
Royal Crest, Stewart Co	1.95
Winter Haven, fy and ch, Stewart Co.	1.75
Marguerite, XC, Earl Fruit Co	1.80
Hollywreath, fy, Earl Fruit Co	1.95
Heart	2.90
Pioneer, spl, Pioneer Fruit Co	2.25
Royal Knight, R H Ex	2.90
Watchumna, imp, T C C Ex	2.80
Lemon Cove, imp, T C C Ex	2.30
Homer, imp, Q C Ex	2.95
Homer, Q C Ex	2.75
Camel, Q C Ex	2.30
Naranjo, imp, T C Ex	2.35
Naranjo, T C Ex	2.30
ARIZONAS (Boxes)—	**Avge.**
Desert	4.55
Cactus	3.15

ARIZONAS (Halves)—Desert, $2.45; Cactus, $1.90. LEMONS—Pet, $3.15; Arab, $2.87; Greyhound, $2.55. TANGERINES—Heart, $1.80.

BOSTON, Tuesday, Dec. 13.—Six cars sold. Weather clear and cold. Market easier on oranges, stronger on lemons.

NAVELS—	Avge.
Whitney, S V, Peryne	1.70
Cosmos, S B Ex, Yerkes Spur	2.55
Mariposa, fy, Earl Fruit Co	2.25
Crocus, S B Ex, Yerkes Sur	2.75
Heart of California	2.70
LEMONS—	**Avge.**
Crocus, S B Ex, Yerkes Spur	3.35
Cosmos, S B Ex, Yerkes Spur	2.80
Canna, S B Ex, Yerkes Spur	3.20
Royal Crest, fy, Stewart Fruit Co	2.60

PHILADELPHIA, Tuesday, Dec. 13.—Two cars lemons sold.

LEMONS—	Avge.
Coyote, O K Ex	2.10
Sunrise, S D, Earl Fruit Co	2.20
Marguerite, XC, Earl Fruit Co	2.15

Fourteen cars Floridas sold. Oranges, $1.20@3.00; average, $2.05. Grapefruit, $1.55@2.60; average, $2.10. Tangerine, $1.20@2.25; average, $1.80. Market easier.

CHICAGO, Tuesday, Dec. 13.—Lemons rule easier under good offerings. Boxes, California fancy 300s, 360s, $3.00@3.25; extra choice, 25@50c per box discount.

Colder weather has made the orange market a little more quiet. Navels are in fair request. A good business is looked for between now and Christmas. Boxes, navels, California, 96s, 126s, $2.25@2.50; smaller sizes, $2.75 @3.00.

STATE CREAMERY OPERATORS.

The California Creamery Operators Association met in its eleventh annual session in the city of Los Angeles last week. Creamery operators from all portions of the state and experts in creamery work were present. President C. C. Ridgway of Porterville presided. The visitors were welcomed to the city of Los Angeles and response was made by President Roesell of the San Francisco Dairy Exchange.

President Ridgway's annual address touched upon the growth of the association and the better conditions in the creamery business effected by the organization. He said, "We stand for the enactment of just laws in our business and the progress of the creamery business owes its greatest advance to the work of this association during the past eleven years." Rev. A. C. Smither of Los Angeles addressed the convention on the subject of the weight of butter and made a very touching appeal for fair weight, which was received with much pleasure by the delegates. Prof. Hopper of the State University, C. L. Mitchell, F. W. Andreason, Secretary of the State Dairy Bureau, and others made addresses. Trolley rides, theater parties, a banquet, and other features added to the pleasure of the convention.

A CHRISTMAS SUGGESTION

THE CULTIVATOR annual offer of subscriptions for Christmas presents is now in order. What can be more appreciated, in proportion to its cost, than a year's subscription to our paper?

Other presents can not be the constant reminder of the giver that the Cultivator would be on its weekly visits.

In each case where our paper is intended as a Christmas gift we send, with the first number, an announcement of the gift showing the name of the giver. No present can be arranged for so simply and satisfactorily for all concerned. Merely enclose check or money order with order blank which may be found on another page of this issue, and we will do the rest.

As is stated on the order blank all Christmas or gift subscriptions are discontinued at expiration. This date is usually January 1, though we arrange to have the first copy reach the reader as near Christmas day as possible. Now is the time to send orders.

VETERINARY

Answers in this column by Dr. Fred G. Matthews, are without charge. For immediate mail answer remit $1.00. In writing questions give full symptoms or particulars of injury of animal.

Spleen and Kidney Trouble.

I have a mare 18 or 20 years old. She has been ailing some time and I gave her a quart of raw linseed oil and called in a veterinarian who left a course of medicine for the spleen and kidneys, which has benefited her, but she does not pass as much water as she should. I feed good oat hay, bran and barley. Kindly prescribe for the spleen and kidneys and oblige—Subscriber, Pasadena.

Have this animal's teeth examined and, if necessary, treated by a qualified veterinarian. Include a liberal allowance of alfalfa meal with the grain ration, and twice daily mix into the feed one tablespoonful of powder made of gentian root, 2 ounces, nux vomica 1 ounce, resin 2 ounces, and dried sulphate of soda 7 ounces.—F. G. M.

Scours.

A four-year-old Jersey cow turned from dry feed to clover developed scours which has persisted about three months. Several remedies have been tried with no good result. She has a light cough. Is running on oat stubble pasture with good many green oats in it.—Subscriber, Twin Falls, Idaho.

Remove the cow from the green pasture and feed dry food of good quality. Purge with one pound of epsom salts and one-fourth pound of table salt dissolved in two quarts of water as a drench. If improvement does not follow have your druggist secure Merck's Tannoform and give the cow 2 drachms three or four times daily. The cough will probably disappear when the indigestion is relieved.—F. G. M.

Worms.

What is a good thing to give horses for worms?—Subscriber, San Dimas, Cal.

Starve the horse 12 to 18 hours and give two ounces of turpentine in a pint of oil and follow with two drachm doses of a mixture of equal parts of dried sulphate of iron and powdered gentian root, twice daily, in the feed, for a period of ten days. Discontinue treatment one week and repeat if considered necessary.—F. G. M.

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Old-fashioned Spanish barbecue at noon.
It will pay any dairyman in the state to attend this sale and see one of the finest herds and best equipped dairy ranches in the West.
Routes have been sold, and owners are positively closing out entire herd and retiring from business. Sale takes place rain or shine.

☞See future ads or inquire of auctioneers for full particulars.

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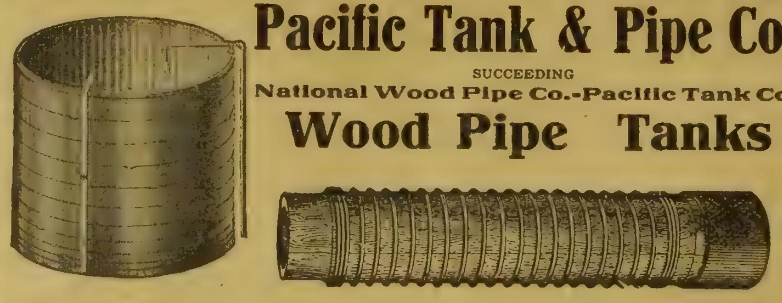

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Los Angeles December 22, 1910 San Francisco

A LUXURIANT REGION OF GARDEN, FIELD AND ORCHARD CROPS

CHERRY PACKING IN SAN JOAQUIN COUNTY. Courtesy Stockton C. of C.

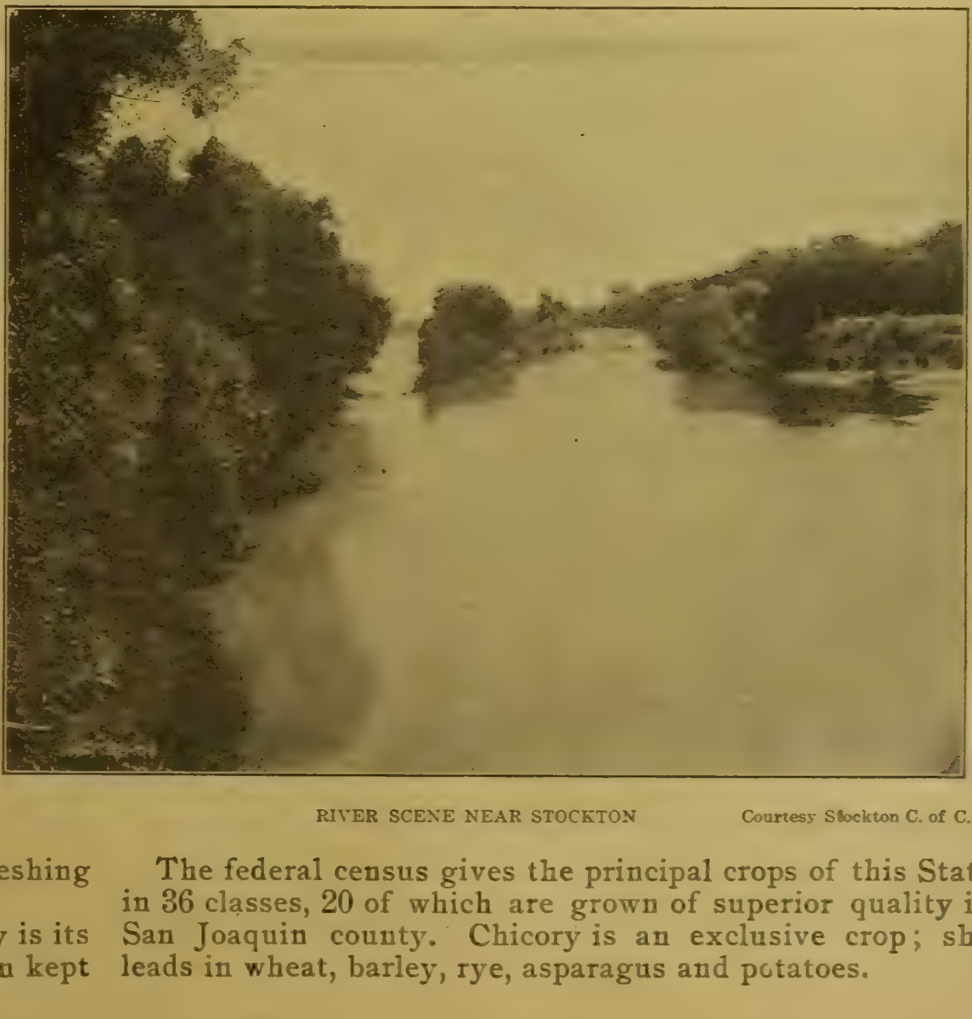
One of the very best watered regions and richest counties in California is located in the geographical center of the State, and its principal city has been called The Gateway, because of its commanding situation. This principal city is Stockton, and the county is San Joaquin. West of the city of Stockton are the rich deltas of the San Joaquin and Sacramento rivers, once considered worthless, but now (through the construction of levees and cultivation) more productive than the lands of the Nile or those of the Netherlands. Asparagus, celery, potatoes, and all the garden crops demanding intensive cultivation, produce marvelously while the work of reclamation is still being rapidly pushed. East and north of the city are the higher lands, at one time among the richest grain fields of the State, now given over to fruit growing. The table grape vineyards of Lodi and Acampo have sent out their hundreds of cars of Tokays, thus increasing California's reputation as a fruit producer.

As to its climate, one writer has said: "Lying between two ranges of mountains that gather and store the sun's rays and shut out the cold winds, the valley is warmed to that degree of rich productiveness so necessary to bring the blush, the flavor and the sweetness to our fruits. At night, however, the valley is cooled by the fresh, western breeze that sets in from the ocean and blows through a pass in the mountains, so that undisturbed, refreshing slumber follows the day's work out of doors."

One of the attractive feature of San Joaquin county is its system of good roads, a campaign for which has been kept up for many years. In addition to actual road construction its people have given attention to ornamentation. Arbor Day is generally observed every spring, when nearly the whole population turns out to beautify the roadsides. Stores are closed, and it is made a general gala day with picnics and play, in addition to the work of tree and shrub planting.

The rainfall averages 14.54 inches for the season, and the inexhaustible nature of the soil made it so easy to raise grain year after year, that grain farming long was, and still is, the predominating industry of the county. But many are finding it more profitable to cut their large holdings into small tracts, which are being devoted to orchard and vineyard, garden and dairy products. Even without the use of water, lands devoted to sugar beets yield handsomely, deciduous fruits, grapes and nuts also find congenial conditions.

The river scene taken on the banks of the Mokelumne gives but a faint idea of the riches obtainable through irrigation in that county. The two principal streams are the San Joaquin and Mokelumne. The former not only gives of its waters for irrigatian, but also affords water transportation between Stockton and San Francisco. San Joaquin is a rich county that promises still greater development within the next few years.



RIVER SCENE NEAR STOCKTON Courtesy Stockton C. of C.

The federal census gives the principal crops of this State in 36 classes, 20 of which are grown of superior quality in San Joaquin county. Chicory is an exclusive crop; she leads in wheat, barley, rye, asparagus and potatoes.

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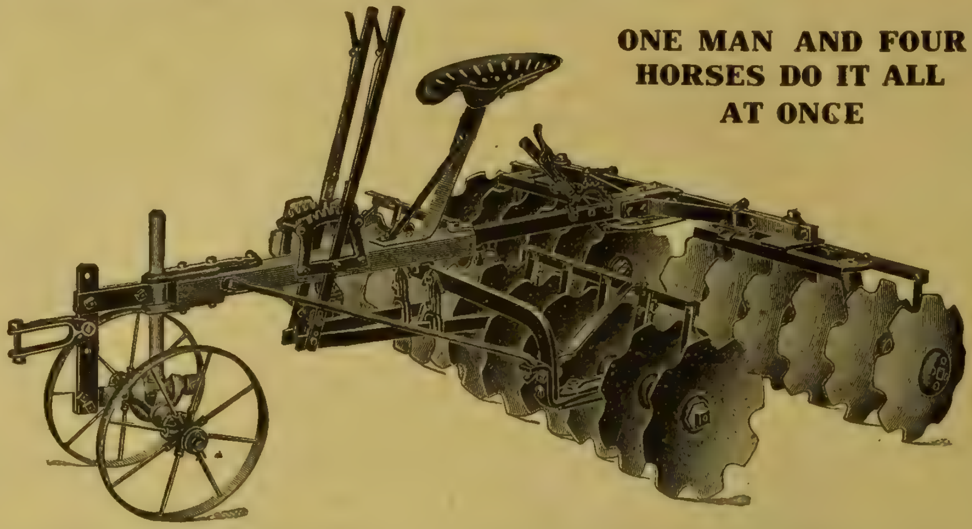

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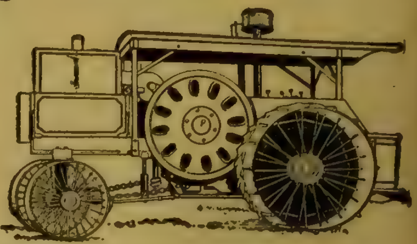

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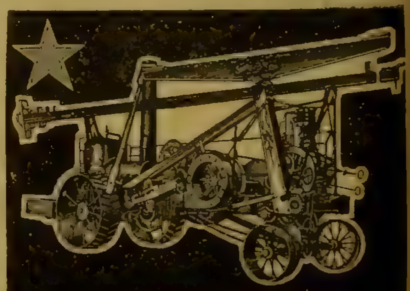

California Cultivator

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Is Asiatic Labor Essential to California's Welfare?

By John T. Bramhall, East Auburn, California, who Thinks Highest and Longest Continued Prosperity will be Secured by Keeping "California for Americans."

The San Jose scale came, we are told, from China. It threatened the citrus orchards of America with ruin, and has been held in check—not eradicated—by the utmost vigilance and at immense expense. But that only menaced the orchards; what if a worse peril is threatened, a peril that throws a dark shadow over the orchardists themselves and forbodes a ruin to them and all agriculturists as dire a that which threatened the orange groves?

To prophesy evil is indeed a most unwelcome task, but when one sees a rock on the track or a break in the reservoir there is but one course open, to sound the alarm. In reading an account of the labor troubles, or I should rather say the race peril, in South Africa, I came across a striking parallel. It appears that in 1859 the land owners of Natal petitioned the governor, Sir George Grey, to be allowed to import Asiatic labor. The corporation (city) of Durban supported the appeal in an address in which they used the following language:

"Independently of measures for developing the labor of our own natives, we believe your Excellency will find occasion to sanction the introduction of a limited number of coolie or other laborers from the East in aid of the new enterprises on the coast lands, to the success of which sufficient and reliable labor is absolutely essential; for the fact cannot be too strongly borne in mind that on the success or failure of these rising enterprises depends the advancement of the colony or its certain and rapid decline. Experimental cultivation has abundantly demonstrated that the issue depends solely on a constant supply of labor."

Some time ago was made the report of Labor Commissioner Mackenzie on the investigation of the Japanese in California, under special act of the legislature (intending to strengthen the hands of the governor in maintaining California's anti-Japanese policy before the president and congress), which finds:

"That the perpetuity or continued development of these great and highly specialized forms of agricultural activity must largely depend upon a supply of labor coming from without the United States, and of such a nature and character as to conform to the condition resulting from the application of that labor to the agricultural demands."

And also, as regards the supply of white labor:

"That the creation of an ideal, intelligent class of white farm labor to be drawn from all sources within the confines of the United States is practically an impossibility for the reason that such an effort would entail an entire and radical readjustment of economic conditions, etc."

It is but natural that the employers, whose opinions are thus stated by the labor commissioner, should be unable to see any side to the question but their own, nor can they be expected to be informed regarding the experience of people in another hemisphere, who, laboring under conditions very similar to their town, have made a like effort for relief. They will be interested, doubtless, in learning the nature of this experience. I find this related by Mr. L. E. Neame, of Johannesburg, South Africa, in a recent number of the Annuals of the American Academy of Political and Social Science. The "limited number of coolie and other laborers from the East" has swelled into an Indian population greater than the entire population of Natal. The Asiatics called in to help the "enterprises on the coast lands" have spread all over the uplands, which ought to support a large white population. Instead of tne "specialized agricultural industries" alone, such as the tea and sugar plantations, it is the farmers, the manufacturers, the wealthier residents of town and country alike, says Mr. Neame, who are demanding Asiatic labor. And what is the result? "Today the adult male Indians in Natal outnumber the adult male Europeans by ten thousand. Indian shops are found in the best streets of Durban, and in some of the small towns hardly a white man's store is left. The 'limited number' of coolies now own thousands of acres of land. They are the fruit and vegetable growers of the colony. "A member of the Natal legislature wrote some time ago:

"Indians both rent land and hold it freehold, and their holdings of both classes are extending year by year. Large areas of the coast country of Victoria, north of Durban, have of late years been acquired by syndicates of Europeans and retailed acre by acre to these people, who are keen to buy and are willing to pay prices which no European could afford for occupation and cultivation. As a matter of fact, in this Garden county of the Garden colony, the European population cultivating the soil is probably smaller in number than it was thirty years ago, while the Indian is gradually taking up the land upon which were reared in those days families of Europeans—colonists of the best stamp. What will be the outcome is causing anxious thought to many in Natal, who look beyond the present day and its present profit."

Now let us look at Cape Colony. Following the recent period of depression, in the five largest towns in the colony, as we learn from the same authority, Cape Town, East London, King William's Town, Kimberly and Port Elizabeth, the number of general dealers' licenses issued to Europeans in 1906 fell off 25 per cent from the previous year, while the licenses to non-Europeans increased 4.6 per cent. Or to put it more directly, thirteen hundred Europeans were forced out of business, and forty-four Indians and Chinese admitted!

And do we say that we will look out for that, that we will admit only "a limited number?" What is our experience already? Does not Mr. Mackenzie's report tell us that he found 10,791 acres in this state under Japanese ownership by recorded deed, and that, though only a small proportion of the leases are recorded he found the "actual lease holdings" in the state to be 115,000 acres? In commercial pursuits, the investigators visited 2,548 establishments run by Japanese, but what proportion of the whole number in the state that may be we are not informed, nor do we know what proportion the $4,000,000 he finds invested bears to the whole Japanese capital in business in California. We are told, however, that these establishments did a business of over $16,000,000, 36.8 per cent of which was with white people. In the conduct of the business, 5,556 persons were engaged, of whom there were 35 male and 20 female white persons. (Mark this latter item.) The figures, be it remembered, are incomplete, as they do not embrace the whole number of Japanese establishments. It is also worth noting that on the 1,733 Japanese farms visited, "96 per cent of the labor employed was Japanese, while 872, or 4 per cent, was equally divided between male and female white." from which the commissioner of labor proceeds to deduce some information regarding the proportion of the $28,000,000 worth of crops which was raise by the Japanese. By the same token we may calculate that $1,120,000 worth of produce, at least, was raised for the Japanese by the labor of these 436 white women. But figures and percentages founded upon the report are wholly valueless, sin there is no definite basis to go upon. We only know that there were so many, and so much, of this or that, plus—. I will only pause to suggest that it must be very distasteful to our California ranchers, whether of specialized industries or not, to learn that besides the white girls employed in the Japanese stores there are several hundred white women employed on the Japanese farms. And still we have not Asiatics enough!

Let me present three pictures. First, in the Monterey district. When the Japanese arrived in the Pajaro valley they were welcomed by the merchants; today the merchants bitterly complain that the Japanese have become close competitors. They run barbershops, restaurants and ready-made clothing stores in the city of Watsonville and operate busses and delivery wagons in the adjacent territory. One bank positively refuses to open an account with the Japanese because of their absolute dishonesty.

Next, the Vaca valley. The Japanese came to this valley, in Sonoma county about twenty years ago, and began working for small wages. Their number increased until they not only displaced about all the white labor but the Chinese also. Then they began to rent orchards, outbidding the Chinaman until he ceased to be a factor. Now the "Japs" control more than half the fruit farms of the valley. Prior to the advent of the Japanese, Vaca valley was renowned for its orchards, which attracted wide attention on account of the superior methods of pruning and cultivating. Today there can be no boasting in this respect, for the orchards, like most of those cultivated by the Japanese, are run down and neglected. In Vacaville, the Japanese stores are doing the bulk of the local and nearly all the farm supply business.

Fresno, from its commanding situation, should be one of the most prosperous cities of California. It is in the center of the most productive raisin district of the state, yet in recent years its vineyard acreage has not increased and bank deposits have increased less than 20 per cent in the past six years. Here as in nearly all the fruit centers of the state the Japanese have gained a foothold, and the region has suffered in consequence. He is merciless when he has his employer at a disadvantage; he works cheaply until all competition is eliminated, and then strikes for higher wages. The next step is to supplant the white owner, either by lease or purchase. "The general persistency with which the Japanese are entering many industries," says a Fresno correspondent, "their frugality, their ambition and their lack of business morality, render them more formidable than the Chinese." These pictures could be duplicated from the deciduous fruit region, and from every district into which the Japanese have entered.

But let us say no more about the Japanese. Indeed, I have used the above illustrations, which I have drawn mainly from the report of the bureau of labor statistics for 1905-6, only to emphasize the general statement that the presence of the Asiatic is detrimental to the interests of the Caucasion. Neither the Japanese nor the Chinese need be considered as a

(Continued on Page 634.)

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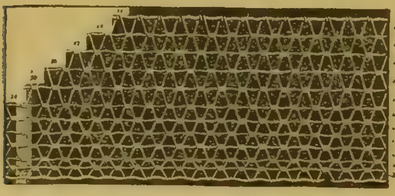

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Citrus and Tropical Fruits

ORCHARD HEATING IN COLORADO.

It is practically impossible to estimate the average damage to fruit from late spring frost, but a conservative estimate of the average annual loss to fruit growers in the United States from this cause would be at least 50 per cent. of the possible crop. It is probable that the percentage of annual loss is even greater than 50 per cent., but assuming that half of the possible crop each year is destroyed at its inception by frosts, when it is stated that a method has been discovered whereby the greater part, if not all, of this loss can be avoided, every fruit grower is interested.

The recent experiments in orchard heating in the Grand Valley, Colorado, have apparently demonstrated beyond doubt that it is possible to maintain a safe temperature in orchards when the natural temperature is at 20 degrees above zero or even lower. As a result of the experiment in the Grand Valley, a crop of fruit valued at $2,000,000 was saved and marketed when the records show that temperatures at various places in the valley were as low as 19 and 20 degrees above zero.

About 70 per cent. of the orchards of the valley were heated during the danger period of 1909, and without exception these orchards had crops where those in the danger zone lost all of their crop. The experiments went so far that trees protected by the heat on one side and unprotected on the other, bore fruit on the protected side and none on the other. While there are still many details to be worked out, results thus far attained justify the assertion that it is possible to protect the fruit crop from the early and late spring frosts by applying artificial heat.

During the years of development of the Grand Valley fruit industry, killing frosts late in the spring were unknown, and losses from this cause were apparently very light until about three years ago, when practically the whole crop was lost by a late frost in the spring. This calamity awakened the growers to the fact that the late frosts were possible even in the favored Grand Valley, and they began to look for remedies. Very naturally, smudging was the first resorted to and some of the growers went to California to investigate the smudging done there. During the winter of 1908 a representative of a manufacturing concern in California arrived in Grand Junction with a carload of pots to sell and no market. Then along in April came a warning from the weather service of killing frost coming. Three or four of the more progressive growers determined to make an effort to save their crops and in a few moments the stock of smudge pots was sold. They were for oil and there was no crude oil in town, and no time to send for any. The experimenters were not discouraged, however, and they proceeded to buy out the stock of kerosene oil in Grand Junction.

That night the temperature dropped to about 23 degrees, and with the exception of a few orchards in favored localities the crop was practically destroyed everywhere but in those orchards where the pots were used. It could hardly be called smudging, for the cold was too strong for smudge to benefit. It was actually heating the orchard, and when the night was past the few men who fought against aparently hopeless odds were tired but triumphant. They had saved their crop, or the greater part of it. Unfortunately there were not enough of smudge pots to cover all the ground they desired, but as far as the pots covered the fruit was safe. James L. Hamilton had twenty acres of orchard divided in the middle by a road; he concluded to devote his efforts to ten acres on one side of the road. Result, a complete crop on one side and none on the other

While many points were settled very conclusively, there is still much debatable ground over details of methods and apparatus. Inventors of patent heating appliances add much to the confusion by extolling the advantages of their heaters, but these are comparatively unimportant details. It seems now to be agreed that orchard heating is effective. The details of method may perhaps affect the cost, but not the basic principle.

It was demonstrated that the heat used should be subject to regulation and adjustment. If the frost should be light but little fire would be required, but temperatures are liable to very rapid change. The thermometer might drop several degrees in as many minutes and the appliance must be of a nature to permit of rapid adjustment to these conditions. This was one of the objections to the use of coal. The coal fires once started provided a maximum heat which must burn normally or be put out. If extinguished, they must be rearranged for relighting and this takes time which might be fatal to the results desired.

There has been much confusion in the mind of the public over the theory of smudging and heating. The Grand Valley method is a combination of both principles of "heat" and "smoke," and while some are of the opinion that the heat is the main factor, and the smudge or smoke of no value in the general result, there are many who consider the smoke a great assistance in maintaining the heat. The original theory of the "smudge" is as follows: When the frost attacks the fruit blossom the cold draws the sap from the blossom to the surface and forms it into a frost crystal. It was found that when the morning sun reached these frost crystals it dissipated them so rapidly that this moisture, really the life blood of the blossom, was evaporated into the air and the blossom died. Fruit growers called this "scalding." The idea of the smudge was to provide over the orchard a shade which would keep the morning sun from the blossoms while the temperature gradually rose and melted the frost, thus permitting the moisture to return within the flower. The practice has been very successful for years both in this country and Europe.

In the Grand Valley some of the growers claim that as they do not permit the frost crystals to form, by maintaining the temperature in the orchard above the frost point, the smudge is not necessary. There is a faction, however, that argues with some degree of logic that the smoke, being composed of minute particles of carbon, which are heated when they leave the flame, is a material factor in maintaining the temperature, and that in quiet weather this heavy smoke forming above the orchard provides a canopy which not only retains the heat under it, but that the atoms of carbon absorb the cold and keep it from the trees. It will probably require some scientific experiments to determine which of the theories is correct. It is sufficient to say that all of the methods used in the Grand Valley made more or less smoke and that all were uniformly successful. It is agreed, however, that the system should be called "orchard heating," instead of "smudging," as the principle is based upon the idea of maintaining the temperature in the orchard rather than with potecting the frosted blossoms from the sun.

In the Grand Valley the following general principles of orchard heating are accepted as established:

First—The appliance for heating must be simple, easily controlled and adjusted and capable of quick application.

Second—The object is not to raise the temperature in the orchard, but to maintain it. It is agreed that it is much easier to maintain a safe temperature in the orchard, with a falling temperature outside, than to raise the temperature after it has declined.

Third—The danger period covers the time from the first swelling of the bud in the spring until danger is past. This covers a period of from four to six weeks, making allowances for the different varieties and the variation in time of blooming.

Fourth—Heating appliances should be placed in position in the orchard at the first indication of swelling buds, provided with fuel and be ready to fire at a moment's notice. In cases where there are no trees or other windbreak on the windward side of the orchard, a double row of pots should be placed slightly to the outside of the outer row of trees, as a safeguard against the deflection of the heat waves by passing wind currents.

The average danger point is thirty degrees, but when the temperature is falling it is best to start the fires when the temperature is at 33 or 34, and regulate the fires to meet conditions, seeking to maintain the temperature.

Fifth—Each orchard should be provided with a number of tested thermometers, which should be hung at an elevation of about four and a half feet from the ground. One or two thermometers should be hung outside of the heated area to guide the firemen as to actual conditions around the orchard.

Sixth—The heaters should be so constructed as to provide an adequate supply of fuel for seven to ten hours' burning. Oil pots should have a capacity of from two to three gallons of oil, or there should be enough unlighted pots in reserve to provide for every contingency. The critical time is usually just before sunrise in the morning, and there must be a certainty of ample fuel left for that time. The greater the capacity of the heater the fewer will be required to the acre.

Seventh—Eternal vigilance is the price of success in orchard heating. Take no chances, but when the temperature is going downward and is reaching toward the danger point, light up. Do not trust patent thermostats with electric alarm bells. When there is danger in the air keep your eye on the thermometer and be ready for quick work.

PROFITS OF ALLIGATOR PEARS.

The avocado, or alligator pear, as it is commonly called, is attracting considerable attention here of late among a few of the most venturesome people who are planting them on a commercial scale, writes A. R. Rideout in Whittier News. And well they may, for it is destinned to be one of the leading fruits of this section;; but being tropical it will not grow upon the low lands even here.

People are just beginning to waken up to the possibilities of this fruit in this climate. It has been thoroughly demonstrated that they will grow and bear well here.

Trees are now growing and bearing well in Pasadena, Hollywood, Monrovia and Whittier.

The fruit is not like a fruit, nor can its flavor be described. It is called the salad fruit. The English call it vegetable marrow, and well does this name apply to it, for it looks very much like marrow. It is very rich with vegetable oil and can be eaten by the most sensitive dyspeptic or invalid. The most popular way to eat the fruit is to spread it on bread like you would brtter, salt and pepper it if you wish and eat it this way; or just cut the fruit in halves and eat it with a spoon, or use lemon juice, vinegar or olive oil. If you do not like it the first time you will a little later if you continue to nibble as it is more alluring than the olive.

Some of the shrewdest business men of this section who have a keen eye for penetrating the future can see the possibilities of this fruit, which is destined to have a place upon nine-tenths of the tables of all the rich and poor in our fair land as far as the fruit can reach them. And this will be across the continent.

Only a few more years and it will be in most every dinner pail, in every restaurant and hotel, and the central figure of many a sandwich for you and others "to bite on."

H. E. Huntington has a nice planting on his home place at Oak Knoll. Planters will be criticized as were the first people to plant softshell walnut trees, and as they were who would put out the grafted walnuts—but just wait awhile.

The food value of this fruit will force it to the front faster than the supply, as they are now selling for 40 to 50 cents each, and trees bear from 500 to 2,000 fruits in a year. The fruit from one tree sold for $325, but at one cent each it will be a paying investment.

Seedling trees may bear at five or six years, and may never bear. Some may bear sparingly or worthless fruit but like all other choice fruits will have to be budded to obtain best results.

QUITE DIFFERENT.

Mrs. Subbubs (who has hired a man to plant shade trees)—Digging out the holes, I see, Mr. Lannigan.

Lannigan—No, mum. Oi'm digging out the dirt an' lavin' the holes.—Catholic News.

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Deciduous Tree-Shrub Fruits

FIGS IN THE EAST.

To many of our eastern friends Ohio is yet on the frontier and beyond this is still the Great American Desert. Down the Atlantic coast are a number of civilized colonies but "Out West" is woolly and wild. Our good friend the Country Gentleman of Albany, York State, is a little inclined to ignore us save when roasting us because we want Uncle Sam to aid in irrigation development in arid sections.

In an article on "Studies in Fig Growing," the Pacific coast is, of course, ignored, but York State figs and those grown as far away from home as Carolina are referred to. It's interesting. Here it is.

One of the most interesting minor fruits in America is now the fig. Formerly this was only the plaything of a few cranks and amateurs. Andrew Jackson Downing used to play with figs in New York State, but fig growing was not taken seriously anywhere in this country until quite recently. Now it is being developed on a large scale in the southern states. We were reading only the other day that tons of figs were going to waste in southern Texas because the orchards were bearing more heavily than the canning factories had expected. In that section, the fruit is used chiefly for preserving, and there are extensive young orchards coming into bearing. In other parts of the South, however, as in Louisiana, Florida, Mississippi, Alabama and South Carolina, fig culture is coming to be a regular thing, and a small number of fig trees is considered quite as appropriate a part of the farm equipment as a similar number of Baldwin apple trees on a New England farm.

Some interesting studies of fig culture have recently been published by Prof. F. C. Reimer of North Carolina, giving a very practical discussion of this subject. He believes that the eastern half of North Carolina is especially well suited to the growing of figs, having a distinct advantage over the territory farther south. He says that the cold winter weather is more destructive to fig trees farther south than it is in North Carolina. This is due principally to the marked changes in the weather in winter in the former section. The tree is sensitive, and starts into growth quickly during warm spells and then is injured by any set-back. Figs can be grown in any part of North Carolina east of the mountains, although in the central sections they may need some winter protection. The extreme coast sections are especially well adapted to fig culture.

With respect to soil, the fig is not at all fastidious. It can be grown successfully in almost any soil, ranging from the light sandy soil of the coast to the heavy, sticky red clay soils of the Piedmont section. It will thrive on low, moist, marshy land, or on high, dry, sandy land. The best soil for figs, however, is a well-drained, moist, mellow, sandy loam, well filled with humus. It should contain an abundance of lime, and this consideration is especially important if the figs are to be shipped long distances, or if high quality is an important consideration.

The propagation of figs is usually effected by means of cuttings. As a rule, the method is easy and entirely successful. The trees should be transplanted in spring, as fall planting is found unsatisfactory. The distances apart for setting fig trees run from 10 to 20 feet. It depends upon varieties. Some varieties grow much stronger than others. The trees should be planted deep—from 4 to 6 inches deeper than they stood in the nursery row. Then they should be cut down quite to the surface of the ground. This induces them to branch freely and produces the desired bush form. In order to get this bushy growth, some planters consider it best to put four or five plants or cuttings in a single stool.

In the question of cultivation, the same controversy has arisen which has agitated some of the apple growers in the North, namely, the question of whether no cultivation is not perhaps better than the usual method. Professor Reimer does not hesitate to recommend cultivation. He says that while good results are obtained from both methods, by far the best results are obtained when the ground is kept mellow, moist, and free from weeds, and is cultivated shallow, so as not to damage any roots.

Heavy feeding is necessary for the success of fig culture. The tree is a rank feeder, and large quantities of food are required to maintain the foliage and to ripen the fruit. Stable manure is commonly used, and is particularly important in sections where humus and nitrogen are naturally deficient. Lime is also important. All the other fertilizing elements are also needed, and some of them can best be supplied in the usual forms of mineral fertilizers.

Pruning the fig tree is a delicate and difficult operation, not altogether well understood. In the extreme southern states, pruning is usually looked on with disfavor, but Prof. Reimer considers it to be an absolute necessity in North Carolina. He says that the fig should never be grown as a tree—that is, with a single trunk; every effort should be made to induce it to form a bush or stool. In order to secure these results, proper pruning is essential. It is highly desirable to induce low branches. This can be done both by winter pruning and by pinching back in summer. After the tree comes into bearing, little or no pruning will be required.

There are two crops of figs ripening annually on most of the trees grown in the central South, one crop coming in June and the other during September and October. There is a very interesting technical point connected with this difference in crops, for while the first ripening is not much earlier than the second crop, it is very distinct from it. The fruit of the first crop is borne on the last wood produced the previous season, while the second crop is borne on the new wood of the season's growth. The first crop is small, but the individual figs are large. The second crop is large, but the individual figs are small.

The weather during the pickling season should be dry, with an abundance of sunshine. If the weather is rainy or cloudy, the figs crack open and spoil. If there is a heavy dew in the morning the figs should not be picked until the fruit is entirely dry. The picking is a delicate operation and should not be undertaken by every greenhorn. The best hand work is required. Even at the best, the work is tedious.

The fig is one of the most difficult fruits to place on the market. The best shipping crate is the regular strawberry crate, holding 24 to 32 quart baskets; six-basket peach carriers are sometimes used, but the baskets are too large to handle the fruit to the bes advantage. The fruit must be handled rapidly, always shipped by express, and when possible in refrigerator cars. When they are properly handled, there are good financial results to be expected. One good North Carolina grower is quoted as saying that an acre of figs has netted him from three to five hundred dollars a year for the last five years.

The fig is coming into much larger use as a fresh fruit wherever known. It has long been considered almost a necessity in southern European countries, and has been eaten rather freely by those people who had a supply here in America. Undoubtedly the market for this fruit can be very greatly extended.

NATURE RENEWS ITSELF.

By Gerald Geraldson, Newcastle.

There is a natural law that few of us have discovered, but which, nevertheless, concerns every man, woman and child in the world, and therefore must be somewhat important. It is a modest little law and never makes any noise—just works and works, all the time, everywhere; and points and points all the time, everywhere.

It is in evidence everywhere and still those of us that are closest to it can't see it, presumably because we are too close to it; and the rest can't see it, presumably because they are too far away, and yet it is an exceedingly important law.

Briefly it reads thus: "A self-sustaining civilization will always leave one-half of nature's annual supply of vegetation to mature and ripen and seed, and to go back into the soil in nature's way"; or to use more words it could be stated thus: "Civilization is built on soil. Soil builds itself with matured vegetation. Any soil annually produces a certain amount of vegetation. Civilization, to maintain itself, may use half of this vegetation and still keep within the producing limits of the soil. The use of more than half of the annual output of matured vegetation will render the soil incapable of maintaining itself and it will be broken up and dissipated. And with the soil destroyed the civilization on it must be broken up and dissipated.

The simplest illustration of the working of this law is a piece of pasture land. Let us divide it equally. Both parts start off evenly with say one foot of green grass. During the first summer one piece is grazed off so as to leave say six inches of grass and the other so as to leave but three inches.

In the fall when the first rains come that field having six inches of grass will start a new growth almost immediately because the ground is shaded and does not dry out so readily as does the other which has only three inches. In other words, it conserves water bet-

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ter, and by next spring it will be found that the six-inch field will show something over twelve inches of grass while the three-inch field will show something less.

If again the next year the six-inch field is allowed to retain half of its vegetation it will have something more than six inches to start on when the first rains come, while, if the three-inch field has again been grazed down three-fourths, it will have something less than three inches to start on.

Continuing these comparative methods of grazing for a number of years will show that the output from the two pieces of land will diverge enormously, the six-inch piece soon showing a total growth of twenty-four inches, allowing twelve inches to be grazed off, while the other, the overgrazed piece, will have fallen off to practically no output of pasturage, or so little as to render further grazing unprofitable.

This latter is the case in many parts of California today where many pastures are so bare that the first rains, which come when the weather is warm and when the grass starts readily if it is given a chance, all runs off immediately, starting no grass but, instead, washing away some of the soil built so laboriously in past years. Already the process has gone so far that gullies of from one to twenty feet in depth are not hard to find.

Now, in agriculture of any kind this same law prevails absolutely but takes the form of allowing all of the vegetation on half of the land to ripen and mature and go into the soil in nature's way, to enable nature to maintain and build up the soil. The cultivated crop that we take off the ground corresponds to the half crop of pasturage grazed off in the other case.

This kind of cultivation is an actual assistance to nature and really raises the total product of any given soil far above what nature could do in her primitive way because it buries the matured vegetation in the soil seven or eight inches deep while she deposits the major part of it on top of the ground.

The universal system of clean, annual cultivation is precisely the same thing as the overgrazing of the pasture land referred to. While dissipating humus it stops replenishment and must eventually result in the same disaster, the coming of which is timed exactly by the diligence of cultivation, the amount of wash, the amount of humus nature has stored up ahead and the amount of matured vegetation that is supplied artificially, as stable manure, for instance, and some minor factors.

An intensive cultivation that gets abnormal results on a "rich" piece of land, or through frequent cultivation and stimulation, is simply a running on capital and cannot be other than temporary. All such periods in the history of any piece of land must be followed by other periods of reaction and non-production which will bring the total output, over a long term of years, far below that which could have been realized by the conserving method I have outlined. Indeed, in the case of hillsides we must choose between this form of conservation on the one hand and ruin on the other; there is no middle ground.

Therefore I would urge, as earnestly as I can, that those persons interested in transmitting to their children fertile soil instead of wreckage, just try the system of plowing alternate strips on alternate years, and of allowing the unplowed strips to rest absolutely, on a small plot of land, for a term of four years. Surely this is a reasonable request; that you just try it; and in the case of the pasturage too. There is too much at stake to be indifferent. It costs nothing to try it. Only utter bigotry refuses to either listen or try.

HOW TO PRUNE PROPERLY.

There are two buds. One produces wood and the other produces fruit. On an apple tree the fruit buds appear on all limbs over an inch in diameter, but always at the end of a fruit spur, which appear after the tree is two years old. The spurs are small and very crooked, and many pruners take them off under the belief that their existence spoils the looks of the tree.

Pear trees have all the characteristics of the apple tree and the fruit spurs set in a similar manner. To interfere with these spurs is suicidal. The buds are to be found on the fruit spurs, but may be recognized by being round and soft.

The wood buds are small and flat with sharp points and are placed by nature along the bark of the trees.

Pruning is the most essential thing in the life and usefulness of the fruit tree. Do away with the axe in your tool kit and provide a pruning knife, a pair of ten-inch shears, a pair of three-foot pruning shears, a pair of ten-foot pruning shears, a saw and a bucket of paint and a brush. Any kind of paint will do, so long as it is a mixture of white lead. Even the skins which line old paint barrels and kegs can be utilized.

Pruning is done to keep the tree alive, in shape and within reach, as the expense of handling a fruit crop is in the use of step ladders to reach it. The best pruners do the work both in the summer and the winter seasons. Summer pruning produces fruit and winter pruning brings wood. Summer pruning should commence as soon after July 10 as possible, while the terminal buds are alive and the sap is running. The plan should be to cut back the twigs and branches which are making too strong a growth. That makes fruit spur.

Never make a heavy pruning in the tops of the trees, because the result is sure to be found in a heavy growth of water sprouts. If a heavy cut is made in the tops there must be a corresponding root pruning, which is impracticable. As a tree grows it puts out a root system to correspond with its top, and if the latter is cut back the sap which is taken up by the roots must be utilized somewhere, and it causes a growth which is undesirable.

In winter, prune any time after the leaves are off the trees, but the best time is about February 1, because thereafter only a short period will elapse before the sap starts and the wounds begin to heal and the tree puts on its wood growth. In winter cut out the cross-growing branches, the water sprouts, broken limbs, and head back the upright growing limbs so as to keep the tree flat.

In cutting off a branch use a saw. Make the first cut about four inches from the body of the tree, and on the under side of the limb. Next make a cut on the top of the limb and one inch nearer the tree. The limb will fall and not split the bark. Then cut off the stub of the limb as close to the tree as the saw will work, and at once paint the wound. Where the stubs are left they gather bacteria, become diseased and rot out, seriously damaging the tree, if it shall not be ultimately ruined.

Tree surgery is a branch of successful pruning which can hardly be covered in a short lecture, but the paint is the first aid to the injured. As the wounds heal, they must be watched and if for any reason the flow of sap is shut off, the grower must use his pruning knife to open a seam around the place through which the fluid may find a way to do its work. If the grower prunes his trees conscientiously during the first years, he will have little trouble with his orchard.—Prof. Chas. A. Cole, Oregon Agricultural College.

The Puget Sound Electric Railway Company is using Angora goats to keep down the growth of shrubbery along its right-of-way.

STANDARDS FOR GRAPES.

At the standardization meeting at Newcastle recently the discussion resulted in adopting the following standards for grapes:

"Grapes of standard pack shall be fully matured, carefully picked, properly trimmed, wilted at least 24 hours before packing, neatly packed in regular baskets, four baskets to a crate, the crates to be 4½ inches deep, with an 11-16ths cleat under the cover; no stems in sight."

If the fruited canes of the berry bushes were not removed last month it should be attended to now. Cut them out with a berry hook and collect and burn them. By so doing, many insect pests and their eggs are destroyed; whereas, they would escape if left until spring.

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The Ornamental Garden

THE TREATMENT OF ROADSIDES

The planting of trees along all highways is usually insisted upon as a public duty by persons who take an active interest in matters which pertain to rural improvement. The first work undertaken by village improvement societies is most frequently roadside tree planting. The activity of Arbor Day is apt to expend itself in the same direction, and very often the work is commendable from every point of view. A long, straight, level avenue with a row of elms or sugar maples, or tulip trees on either side, set on smooth turf at regular intervals, is always beautiful. No nobler approach to a stately mansion can be conceived of than such an avenue. As an introduction to a suburban park, or the extension of the main street of a country village, especially when it leads to some object of adequate dignity, such an avenue is always satisfying. But in an open, hilly country, roadsides are not always improved when bordered by a formal line of trees. To one standing on an eminence, slender lines of foliage following the winding of various roads across the landscape would rarely be pleasing, and to one traveling on such roads the constant shade and the unvarying repetition of a tree on either side at equal distances would be still more displeasing.

It does not follow from this that the planting of trees along country highways should be discouraged, but it should be remembered that trees can be agreeably disposed in various ways, and that in many cases an occasional group of trees at a crossroad, or a single tree here and there at desirable points by the wayside, will prove more attractive than a monotonous row on either hand in which each tree is precisely fifty feet from its neighbor. It should be remembered, too, that shrubs and vines, and even humbler growths, should have a place on a road border, as well as trees, and there are many road borders where they are of much more importance than trees.

Only a trifling outlay of labor and expense is needed to transform the roadside or embankment into a sweep of verdure, which becomes purple and fragrant with bloom in its season. An unsightly gully filled in with brush to guard against a more serious washout, the hot, raw gravel slope of an excavation becomes in its turn a bower of beauty under the directing hand of one who thinks it worth while to render such service to the wayfarer. We have heard of a piece of road on Long Island which is bright with flowers in their season, through the thoughtful care of the gardener of a large estate near by. We know a mile of country road which grows more attractive every year because a little care is taken to introduce the flowers and shrubs and vines which flourish naturally in that region. Marsh marigolds and cardinal flowers have been made at home by the outlet of a wayside spring. Houstonia and bloodroot bloomed this year where they were unknown before. The thickets are fringed with an increasing variety of ferns, and club mosses are now creeping among them.

It is hardly to be hoped, however, that every land-owner will be persuaded to take such an active and intelligent interest in the treatment of roadsides.

It is a comfort to note that native shrubs are being used more and more in the best park work. These shrubs are proving themselves no less useful or appropriate along the smooth, broad and well-kept wheel way than they are in remote byways among the hills. Indeed, it is difficult to imagine how the hard, stony gutter line beside the road bed could be more agreeably broken than it is by the wild roses and red root that occasionally stray across it, or how any other shrub would take the place of the sumachs banked above a portion of a drive. Every one of these shrubs would grace a palace garden, and yet when they modestly appear along a rural highway they are mowed down to "improve the appearance of the country." If there is no reason to look for any general and organized effort to beautify our country road sides, let us hope at least that overseers of the highway may in time be induced to refrain from expending labor and money to destroy the native shrubs and vines and trees which clothe so many waysides with beauty as with a garment.—Garden and Forest.

DWARF TREES IN JAPAN.

These charming dwarfed trees are entirely a product of the patience and skill of Japanese gardeners, says "St. Nicholas." The dwarfing of these is kept a secret and has never been found out or imitated to such a marvelous degree by any other nation. While there are dwarf fruit trees grown in Europe, especially in Germany and Holland, no such tiny specimens have ever been produced there.

The trees which are used for dwarfing by the Japanese embrace all varieties of conifers, such as pines, cedars, cryptomerias, junipers, many evergreens, such as ilex and Citrus trifoliata; some flowering plants like azaleas and maples; some fruit trees, such as oranges and plums, which blossom and bear the most tiny fruits to perfection. It is claimed for some specimens of cedars that they are over 500 years old. These very ancient trees are handed down from father to son in some families, regarded as priceless heirlooms.—Green's Fruit Grower.

The lily has been given us in song and story for 3,000 years. Solomon sang of its grace and loveliness. Other writers in the Old and New Testaments have mentioned its beauty. Poets have sung of its worth and loveliness down to the present time. We have this mythological account of its origin: "Jupiter wished to make his boy Hercules (born of a mortal) one of the gods; so he snatched him from the bosom of his earthly mother, Alcimena, and bore him to the breast of the godlike Juno. The milk is spilled from the full mouthed boy as he traverses the sky (making the milky way), and what drops below stars and clouds and touches earth, stains the ground with lilies."

Garden and Field Crops

EXPERIMENTS IN BLUEBERRY CULTURE.

An interesting and significant feature in the experiments reported in Bulletin 193, of the Bureau of Plant Industry, just issued by the U. S. Department of Agriculture, is the light shed on the possible utilization of naturally acid lands that occupy extensive areas in the eastern United States, to produce the delicious blueberry or some other crop that thrives in acid soils.

The Department has found by experiment how blueberries differ from ordinary plants in their methods of nutrition and in their soil requirements, and by means of this knowledge it has worked out a system of pit culture under which these plants attain a development beyond all previous expectations. The failure heretofore of attempts to cultivate blueberries commercially as a market fruit, appears to be due to a misunderstaning of the soil requirements of the plants, which, as these experiments show, are radically different from those of our common cultivated plants.

The market would gladly pay a higher price for cultivated blueberries of superior quality. A marked distinction should be made in market quotations between the large plump blueberry (genus Vaccinium), whose seeds are so small as to be almost unnoticed when they are being eaten, and the huckleberry (genus Gaylussacia) in which the seed is surrounded by a bony covering like a minute peach pit, which crackles between the teeth. The failure to make this distinction in nomenclature, and the unsightly condition in which careless handling often presents the berries to the buyer, are the cause of much of the failure in southern markets to appreciate the blueberry at its real value. As the blueberry withstands the rough treatment incident to shipment so much better than most other berries, with proper handling it should always reach the market in first-class condition, whether shipped from North Carolina to Boston in early June, or Nova Scotia to Washington in late September, making the blueberry season cover a period of nearly four months.

To those desiring to experiment with field culture of the swamp blueberry, whether with wild plants, seedlings, or plants grown from cuttings, two methods of treatment are suggested both deduced from the experiments already made. The first method, suited to upland soils, is to set the plants in trenches or separate holes in well-rotted peat at least a foot in depth, and mulch the surface well either with leaves or with clean sand. The excavations should provide ample space for new growth of the roots, and the peat used may be either of the bog or upland type, and should have been rotted for several months before using. The soil should afford good drainage, the ideal condition of the peat about the roots of the plant being one of continued moisture during the growing season, but with all the free water draining readily so that thorough aeration of the mass of peat is assured.

The second method of field culture suggested is to set the plants in a peat bog after the bog has been drained, turfed, and deeply mulched with sand, just as for cranberry culture, except that no special provision need be made for rapid flooding of the bog for winter, and the ground water of the bog might be kept a little lower than is usual with cranberries. Before beginning the work, these experiments should be carefully studied by any one proposing to undertake the culture of blueberries.

ELEMENTARY HORTICULTURE FOR SCHOOLS.

Mr. Clayton F. Palmer, formerly instructor in agriculture and nature study in the Los Angeles State Normal School, and now director of agriculture in the Gardena High School, is the author of a manual for teachers and amateur gardeners. It is a 76-page book, published by the author, and sold at 50 cents. It is the aim of the book to arouse an interest, especially among teachers, in some of the phases of elementary horticulture. The author says in his introduction:

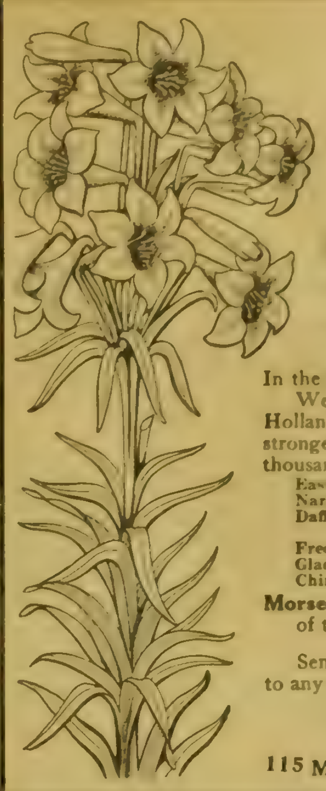
"A great deal has been said and written favoring school gardens as a valuable phase of nature study, or, more specifically, agriculture. Having conducted the work with several hundred students, and watched as many grade pupils at their garden work, the writer is firmly convinced of its value, and earnestly urges every school, which has available ground, and a teacher willing to undertake the work, to profit by the opportunities offered by the growing of plants. But there are many schools which can neither spare nor secure sufficient ground for a garden, and it is perhaps rather to such that this manual will appeal. Several different phases of plant production have been discussed briefly, and it is believed that every school will be able to make use of at least a few of these suggestions."

MUSHROOM GROWING.

The chief essential for success in the growing of mushrooms is to have the manure in the correct condition before the beds are made up. It should be horse manure from stables where the horses have been fed chiefly on dry foods, without too much in the way of greenstuff, though growers often have to chance this, and use large quantities of town manure.

On the arrival of the manure the dry, unstained straw must be separated from the mass, and placed on one side. It will come out later on for covering the beds. The rest should then be put in a compact heap, as if making a long hotbed. After a few days it will be heated. It must then be turned, carefully separating all the lumps and mixing evenly, bringing the outside parts to the centre of the heap. This needs doing from four to six times on alternate days, according to the rankness of the manure, as it must be quite sweet and thoroughly decomposed before made up into beds.

The difficult point is to tell when it is in fit condition. It should be an even mixture of quite short straw and droppings, and must no longer smell offensive, but rather suggestive of the odor of mushrooms. Watering may be necessary when turning the manure if it appears too dry. It is not a crop to be undertaken on a large scale by a beginner, but an experienced grower has no difficulty in securing a yield.



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Peaches have paid growers more profits in the last 25 years than any other fruit.

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(Continued from Page 627.)

problem of the future. The former are excluded, and it is useless to attempt to persuade congress to readmit them. The latter are called back by their own government to be poured into Korea and Manchuria and we need not expect, unless conditions are materially changed, to see them in any considerable numbers again. If the orchardists of California must have a class of "servile labor," from which calamity, good Lord, deliver us! they must take up with the Hindu, a class that for inbred laziness, complete ineffectiveness capacity for lying, cheating and general depravity, has the Japanese beaten to a frazzle. And so far as commerce is based upon the ancient theory that these latter qualities are essential, in so far they are successful competitors of our own merchants. Economically, as shown by the experience of South Africa, the Hindu is a dangerous competitor.

Socially, he is even more dangerous. He calls himself an Ayrian, though few of them have any title to this claim, and through that ancient stock a cousin of the Caucasian. Many of those who come here have served in the native forces of the Indian (British) army, and some have been educated in the Anglo-Indian schools. It is not unusual to see well-built, handsome fellows among the grizzled brigands and starved pariahs that come in the Bombay steerage, and when these are well fed and groomed, and their crooked tongues loosened with English speech,—well, there will be less argument about the impossibility of the Asiatic assimilating with the Caucasian. He has the same ambition for social equality that animates the Japanese, but probably in a greater degree, has more guile, and more advantages. It will readily be seen, therefore, unless we are ready to pay the price of social demoralization, that we do not want the Hindu among us, and should not permit his presence.

And we cannot, should not, pay the price. Let us turn rather to the white labor, that this report of Mr. Mackenzie says is impossible without an entire reformation of the methods employed. The sooner we set about this reformation the better, and end, by a wiser system than we have followed in the past, the curse of the idle, wandering white. The "blanket man" is himself an indictment of the California employer. And every farmer's son who knows more of grammar or bookkeeping than he does of the science of agriculture, is an example of California's folly in neglecting to train her children in the way that they should go. Let us consider this matter before it is too late, and putting aside selfish considerations, shut and bar the gates against the inferior races while at the eastern door we welcome all honest, industrious whites to our fertile fields. Then, with the aid of a wise and generous system of education, a new and better class of California citizenship can be bred up, not of drunken, lazy whites and brown and yellow "American-Asiatics," but of lily-white, rosy-cheeked, blue-eyed Americans, who will make California richer in her harvests and more productive in her mining and manufacturing industries than was ever dreamed of by her most optimistic statesmen. And in so doing, California will save the nation from the worst disaster that has threatened her in all her history.—John T. Bramhall.

TREATMENT OF SMUT IN GRAIN.

Every farmer knows what smut in oats or wheat means. He knows how a field of wheat which gives promise of 20 bushels per acre of grain will produce, infected with smut, only 15 bushels or less, and inferior smutted grain at that. Every farmer ought to know that such smutted grain if not treated before seeding will again produce smut—more smut than before. Every farmer ought to know that even if his seed looks clean, it may still have smut on it, unless he is sure that it comes from a field without smut and that it has not been contaminated with smut in the separator, in the bin, sacks or seeder. Finally every farmer ought to know that by a simple, inexpensive seed treatment he can be absolutely sure that he will have a clean crop—he can buy insurance against smut at a very low cost by treating his seed.

Several methods can be used on the farm—only one of these will be described. It can be recommended to any farmer for cheapness, efficiency and simplicity.

Buy from a reliable druggist standard "formalin" of guaranteed strength "namely of 40 per cent solution of formaldehyde). Mix 1 pound (1 pint) in 45 gallons of water is an ordinary wooden barrel and stir it. Two ways of applying this solution to the grain can be used:

1. Dipping Method: Put the grain in clean sacks that have been first placed in boiling water for a few minutes; take each sack of grain and dip it in the solution in the barrel—raise it and lower until each seed is wet; set the sack on a clean floor and let it stand over night. The grain can then be dumped out on a clean floor or left in the sacks until it dries enough to let it run through the drill. (A floor is clean when it is washed with boiling hot water). Be sure not to let the swollen grain stand so long that it will sprout. If it cannot be sown immediately, it should be thoroughly dried and may then be kept indefinitely. When dry enough to run through the drill, sow it. Be sure the drill is clean. Sow more seed per acre if the grain is swollen.

2. Sprinkling Method: Make the solution the same as in the dipping method. Put the grain on a clean floor, spread it out and with a sprinkling can sprinkle the solution on it. Shovel the grain and sprinkle again. Repeat until each kernel is moist but not too wet. Shovel into a pile and cover with sacks or canvas over night. Then spread it out and shovel occasionally until dry enough to sow. Follow the precautions for drying and sowing given under the dipping method.

This treatment will prevent the following common smuts:

Oat Smut.

Stinking smut (or common smut) of wheat (but not the loose smut or "black head").

Covered smut of barley (but not the early or loose smut).

Grain smut (or common smut) of sorghum (or "cane").

If it does not prevent these smuts you have not followed directions. It must be remembered that this treatment will not prevent corn smut, "black heads" (early smut) of wheat, nor the early or loose smut (one of the common smuts of barley).—University of Minnesota Farm News.

Cottonwood, Idaho, farmers are selling their barley at 85 cents.

Live Stock and Dairy

Dairymen and stockmen are requested to write of their experience. Mrs. Sherman is always willing to answer queries and this, with experience of other workers, will make this department of greater value.

GOOD AND BAD BITS.

I do not doubt that there are a good many men who now and then put a savage bit into some favorite roadster's mouth in order that his fiery temper may the better be curbed, without realizing the extent of the cruelty they are practicing, and with no other intention than to make the horse safe to drive. They should think twice before they inflict needless pain upon a faithful animal.

The inner portion of the mouth of a horse, the delicate membrane of pinkish or somewhat darker hue, has a mass of delicate nerve filaments spreading over its entire surface. The nerves are very sensitive to the touch, and any sharp or unusual thrust upon them causes intense pain. This pain is carried by a set of inner nerves, as well as by a set that runs along under the jaw, up the side of the jowl, and thence into the very center of all pain, the brain, between the slender, sensitive ears. It is difficult for anyone to say just where the seat of pain is, whether it is in the finger which you bruise or in the brain to which the message of distress has been telegraphed; but the question of location is not essential, while the question of distress is all-important.

It is very probable, however, that the brain of the horse, through the series of nerves so intimately connected with the large nerve area of the mouth, is the seat of the intense pain which comes with any undue attack upon these nerves. Anyone who has had a tooth extracted, or who has had any trouble with an ear, or who has been bound in the cruel bonds of facial neuralgia, knows how quick and imperative is the connection between the nerves of the head and the brain itself.

If you should cauterize deeply the inner surface of the horse's mouth, so that all the nerve centers were seared over, no doubt the pain of a cruel bit would be abolished; but at the same time the sensitiveness of the horse to the guidance of its master would be lost, and the value of the bit would be gone. Yet precisely this may happen after a long use of some hard and cruel bit—it may at least so callous the mouth of the horse that it does not hurt him in the old way, and he refuses to respond to the rein. The nerves are all essential; they should be kept in their natural state if the horse is to be a safe, tractable, well-behaved, well-governed animal.

The training of a horse is, to a greater extent than many people believe, the training of his nerves, or, to put it in another way, the training of his disposition, which, in the last analysis, is very much the same thing.

If a horse's nerves have been kept in a healthy, normal condition; if he responds quickly to the various incidents of the horse life; if, in a word, he is just a natural horse, with natural horse likes and dislikes, he is the ideal animal in so far as tractability is concerned. And on tractability depends much of the horse's usefulness, much of his value. If his nerves, and particularly the nerves of his mouth, which are so quick to take the message of pain to the throbbing brain, are not normal; if they are subjected to undue irritation; if, at last, they become immune to all save the most brutal and vicious attacks, then the horse becomes an abnormal creature, he loses one of his most essential elements, he is fit for the cheap horse market, where only second-hand wares are offered for sale.

So in this question of inhumanity to horses by means of bits that are cruel, it is not humaneness alone that is to be considered. That, indeed, is the higher and governing element in the question, but beyond that is the question of dollars and cents.

The man who habitually uses a cruel bit upon his horse's mouth not only does violence to all that is noblest and best in his own nature, but he inflicts a direct damage upon his horse from the standpoint of value. A well-bred horse is a delight; a well-bred, well-broken, good-dispositioned horse is even more than a delight—he is an entry on the right side of the banking account.

I have often been asked when the time would come when the horse would be driven without anything in his mouth, controlled by some sort of a band about the nose and jaw?

There is no horse of good normal spirit which may not at some time become frightened; he may become frenzied. Just as a lot of sensible, well-behaved, sedate human beings may, in the presence of great danger, become converted into an unruly, mad mob, so a horse, under peculiarly trying conditions, may lose his head. The best horse in the world has not greater self-command than the best man, surely. Under such circumstances, it is not possible to restrain a horse merely by the use of a strap; there seems to be nothing but the metal bit which will hold him.

Even with the use of a bit, there are times when a horse, to use the common expression, takes the bit in his teeth, and then there is no stopping him until he has run his course. For very many reasons the bitless driving would be desirable, and under normal conditions it may be that it will become successful.

There does not appear any tenable ground upon which the use of a harsh bit—one of those cruel, merciless refuges of the mean man or the cowardly one, is warranted. Perhaps there are times when some bits other than the humane one are permissible, but such times are very rare—so rare as to afford merely an exception to the general rule of humaneness, which should be the governing rule in the heart of everyone to whom has been entrusted the care and the driving of one of the noblest animals God has given to man. —A. T. Sibbald, in American Cultivator.

Alfalfa should be fed work horses as a concentrate or grain, rather than as a roughage, and should never be fed in unlimited quantities. Many farmers feed all the alfalfa hay the horses will eat. This should not be done, especially when the horse is worked hard in hot weather. Alfalfa is a good winter feed for young and growing stock.

Anthrax Cure, Milk Fever Outfits. See O. J. Weber Co., 225-227-229-231 East Sixth street, Los Angeles.

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We have sold many herds of fine cows in California, but we wish to state to the public that this is one of the very finest herds that we have ever offered in the State at public auction. Purchasers looking for the very finest Dairy Stock or Family Cows should not miss this sale. Prospective purchasers are requested by the owner to visit the ranch prior to sale and see cows milked and tested at 3 a. m. or 3 p. m. daily. We also wish to call attention that this is one of the Finest Equipped Dairy Farms in the West, and it will pay any dairyman in this State to attend this sale. These cows are all selected from the very finest herds in the West and have been carefully culled until there is nothing but strictly first-class stock in the entire herd.

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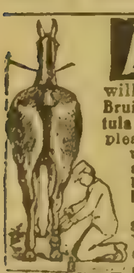

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WIRE CUTS ON STOCK.

Perhaps no class of injuries is as common to the horse as are barbed-wire injuries, and at least two-thirds of such accidents are due to the negligence of horsemen. A loose wire, in the lot, or along the pasture fence, hitching the horse for a few minutes to a fence where the bottom wire is down or when we knew the horse was apt to fret and paw or an old wire gate left down when we drive the horses in or out of the pasture or lot, all contribute to the scarring and causing permanent injuries.

If there is a serious cut about the lower portion of the leg or foot, the first thing that may need attention is to stop the flow of blood. Generally a wire is of such a nature as to tear the blood vessels in an irregular manner and to cause but little bleeding, but occasionally a large vessel is cut and it is necessary to stop the bleeding. The first thing to do in an emergency of this kind is to keep your wits about you. If necessary feel into the cut and learn where the blood is coming from, whether from above or below the cut. If you can find the vessel try and pass a cord over the end and tie firmly. A soft leather strap, a piece of rope or even a suspender may be tied around the leg either above or below the cut as is necessary and then place a stick under this band and twist it as you would a twitch. You can increase the pressure over the blood vessel by placing a piece of wood or hard substance under the band and then tightening up as before.

This band cannot be left on the limb any great length of time, but it will give you time to either secure help or devise some means of stopping it yourself. Powdered alum or tincture of iron are good to use in these cases. Do not fill the cut with dirt, soot, flour or ashes, as this is never necessary.

A wire cut in the fleshy part of the leg or body will heal much quicker than one on the foot or lower part of the leg. The character of the tissue has a great deal to do with healing as a cut in muscle will heal much quicker than where ligaments and tendons are cut. Suppose that a physician should call to dress a wound on the horse's owner and begin by using ashes, axle grease, pine tar, lime or soot? How much of that treatment do you think the man would stand for.

Too often wounds are prevented from healing by the frequent application of some irritating drug. Again, horses are too often turned to pasture where wet and weeds do even more damage than the irritating drugs used. A wound should be kept as clean and dry as possible and a horse with a wire cut about the feet or legs should never be turned to pasture when the grass is wet.

There are a great number of remedies that may be used on wire cuts that will stimulate healing and also keep the wound in good condition otherwise. As a rule the less washing and soaking that you can do the better it will be for the sore. As a wash you can use no better material than some of the coal tar preparations, of which cerolin is an example. Every stockman should keep this material at hand for use on his stock. For a wash use an ounce of the drug to a quart of water and you will have a wash that will not irritate and still have a wash that will cleanse. A powder made as follows will answer most purposes as a dry dressing: Boracic acid, four ounces; zinc sulphate, one-half ounce; iodoform, one-fourth ounce. Mix these and place some of the powder in a salt and pepper shaker and dust it on the sore two or three times a day.

If a wire cut is on some part of the body where there is but little movement, it may be stitched without the stitches tearing out, but if the cut is where the muscles are used in walking or feeding it is best not to try and close the wound, as the stitches will most certainly tear out, helping to make the scar more unsightly than it would have been otherwise. As a rule a wire cut should not be tied up unless the weather is cool and extra care is given to it. It may be necessary to protect the wound against flies, but this may be done by taking a mixture of fish oil and oil of tar and applying it with a feather to the hair surrounding the cut or iodoform may be dusted on the sore two or three times a day.

If the wound becomes irritated by strong drugs, poisoned by weeds, etc., there will generally be a growth of what is called proud flesh. This is an unhealthy growth and should be removed by the knife or by such drugs as powdered alum, (burnt) calomel or some slightly caustic material. As soon as possible the use of these irritating and caustic drugs should be stopped. Occasionally a wire cut will partially heal and then leave a chronic sore that has but little tendency to heal. We have blistered these with a fly blister and stimulated healing when other means seemed to have but little effect. A wire cut will heal on the horse as quickly as a wound will heal on a man if it is kept in the same manner.—Farmers' Star.

CARE OF THE CARRIAGE AND HARNESS.

All of the harness used on the farm should, at least twice a year, be taken apart, washed clean with soap and warm water, and thoroughly oiled. Neat's-foot oil is about the best oil that can be used for this purpose, although there are several good harness oils on the market. For black harness, the addition of a little lampblack is advisable.

If you have a bench on which to work, so much the better. If not, then an old door or a couple of boards supported at the ends at a convenient height will answer.

Go over each piece, using plenty of oil and working it well in underneath the keepers. As you oil them, hang up the pieces across a line or pole and in a warm temperature, but not in the sunshine.

As the oil is absorbed, go over each piece again as often as is necessary until it will absorb no more.

Wipe off the superfluous oil with a cloth, and then, if you wish to, you can give the carriage harness a finishing coat of harness dressing. This is better put on with a brush, as it is a quicker and more economical method than using a sponge. Many people may think that the use of harness dressing is an unnecessary waste of time and money, but a can of it will last a long time, and the use of it will keep your carriage harness looking better longer and in better condition than if not used at all.

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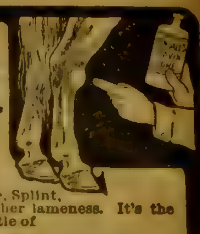

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harness, use some good harness soap. Pure oil opens up the pores of the leather, and this last rub of harness soap keeps the harness in better condition during wet weather. Before putting the harness together again, clean the metal trimmings, and be sure to keep the bits bright. Nothing looks worse than a rusty bit. Use only a little sweet oil on the patent-leather parts.

After driving in wet weather, or at least once a week if you use your carriage harness often, clean it with a damp sponge and give it a coat of harness dressing, or soap, as you prefer. Also give the work harness an occasional cleaning with harness soap.

Go over the harness carefully when you take it apart, to see if it needs any repairs, and, if so, get it repaired before you oil it.

If you have to tie up a broken part with string or wire to enable you to get home, do not use it again in this condition.

Keep your harness in a dry place. You cannot keep it looking good if hung where it is damp. It is a good thing to have a harness closet.

The carriage should be washed every time it is used, and the best time to wash it is as soon as it comes in, especially if it is muddy. Leaving the mud on for any length of time will dull the varnish.

Mud should not be washed off by means of a sponge, as this method will scratch the varnish. If you have a hose, let the water run gently until the mud is softened and floated off. Do not use full pressure, nor a nozzle, as this will cause a grinding effect of mud and water which is bad for the varnish.

After the mud has been taken off, go over the carriage with a sponge and plenty of water, afterward wiping dry with a soft chamois skin. See that the sponge has no hard parts or shells in it.

Do not turn the hose on the upholstery, as the water gets into the folds and under the buttons and rots it.

If you wish to give the carriage a polish, mix one part turpentine with two parts boiled linseed oil; pour a small quantity on a small piece of cloth or flannel and go over the wagon with this, then polish dry with a soft flannel cloth.

Examine the carriage occasionally to see that all nuts are tight. Use castor oil for the axles, a little at a time, and oil often. Wipe off the axle before you oil it, and also the inside of the ends of the hub. See that the wheels are properly supplied with washers.

Wipe the grease off the wrench before putting it away. Keep your carriage covered when not in use, and keep the cushions where the mice cannot get at them.—A $10 Prize Article in Farm Journal.

Do your cows milk hard? Send 50 cents for teat expander. O. J. Weber Co., 225-227-229-231 East Sixth St., Los Angeles.

LAME HORSES.

Lame horses are frequently a source of a great deal of worry, trouble and anxiety for owners often seem to think that a veterinary surgeon should be able to render a horse fit for work almost immediately. As a rule the majority of lame horses are lame low down about the foot, especially in the fore extremities; and in the hind legs the hocks are most frequently the seat of trouble. At times the seat of lameness is very difficult to localize, especially where there is nothing to see to account for lameness. As an example, take shoulder lameness; the animal is unable to rise or extend the limb; if about the foot the leg is flexed and extended, and it is not until the foot is on the ground, or about to be removed from the ground, that lameness is visible. In splint lameness, although there is frequently nothing to see, great lameness is often present. The animal walks nearly, or quite, sound, and trots very lame. In lameness of this kind, without anything to see, it is probably due to splints, especially in a young horse. Shoeing is a very frequent cause of lameness, and, in a great many cases, of incurable lameness. Sufficient attention is not given to this matter. It often happens that by a little mechanical contrivance in the alteration of the shoe, or in the way the foot is shod, the horse will travel sound or become workably sound. Bad shoeing and the mutilation of the foot renders many a good horse valueless, and cutting away the frog, removing frog pressure, cutting at the bars and shortening the toes are main causes of chronic diseases of the foot. The horse's foot, being exceedingly vascular, and its blood supply great, it naturally follows that if the foot is mutilated the blood supply becomes impeded and consequently chronic diseases and atrophy are set up.

BREAKING THE COLT.

Don't break the colt; train him. Begin as soon as he is born and pet, lead, feed and water him. In fact, treat him as though he were a horse.

Teach him what whoa, get up, gee and haw mean by gently pushing him the way you want him to go, then when old enough to work he will know what you want of him.

You can even get him used to the harness by adding a strap at a time and to the shafts by fastening poles on either side of him occasionally. Teach him to draw by putting on very light loads at first and heavier as he gets used to it.

A colt handled in this way will be true and honest, as he will never know he is being made to work. He will love his master and delight in doing what he is told to do, while the one that is taken from the field in a wild state will rear and plunge, smash things and probably get loose and run away, after which he is almost spoiled for a trusty horse. Besides it is cruel to treat them thus, as they never know what is wanted of them.

COLUMBIAN DAIRY COWS.

An effort is being made to spring a new breed of dairy cows in New York state. It is called Columbian, in appearance so far as we can judge from photos, somewhat like the Guernsey. Regarding the breed we note in correspondence in Hoard's Dairyman:

"In the improvement of dairy breeds by selection, environment, feed, etc., for the greater utility to the dairy farmer, two characteristics should be placed foremost. These are performance and constitution, or vitality, and after these beauty and symmetry of form. The history of this new American breed, the Columbian, breeders of dairy cattle will do well to study closely and learn its lessons. About thirty years ago Anson Gregory was keeping a herd of native cattle on his farm in Oswego Co., N. Y. He noticed that one cow in his herd gave more and richer milk than the others, and he raised her heifer calves year after year. Mr. Gregory wanted a sire from a different herd, and he bought a line-back, its dam being his neighbor's best cow. Mr. Gregory's best cow was bred to the line-back bull for several years and a strain of line-back cattle was established.

"Their type of cows being now established, three years ago the name Columbian was given these cattle, under a charter from the state, and the Columbian Cattle Breeders' Association was organized with five members.

"The best and largest herd of Columbians is now owned by C. O. Gregory and his father on the farm where the breed originated. They have thirty-three cows."

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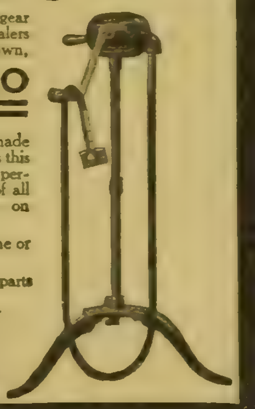

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Parcels Post

There is no doubt that the present Congress is going to be informed on the parcels post question. Being a short session, it is very probable the bill will be mussed around and passed over and the session end without anything practical being accomplished, though the warm friends of an improved postal service are hoping that we may yet secure for Americans the advantages which the American postal service grants to foreigners. As an instance of this discrimination we quote as follows from an address by President Chas. S. Barrett of the National Farmers' Union:

"We have international parcels post agreements with forty-eight nations, with a maximum weight of eleven pounds and a postage of twelve cents per pound. The maximum weight in our own country is four pounds. The rate is sixteen cents a pound. If you want to send a four-pound package even ten miles it will cost you sixty-four cents. You could send it to Naples or London for forty-eight cents.

"In England, where the maximum is eleven pounds and the rate reasonable, the farmers are shipping eggs and other truck products by post at such rates as make it profitable to raise these products.

"Consider what the American express companies charge you for eleven pounds of your farm products, either for fifty or five hundred miles, and you see where you are being bled."

President Barrett represents three million members of a great organization and it is heartily in line and working to secure for Americans this relief from the extortion of the express companies. This extortion is well known to every one who has had occasion to send parcels or to inspect the reports of dividends declared by these companies. The public, excepting in a few cases of deluded country merchants, is almost unanimous in its demand for this cheap carriage of parcels. The country storekeeper, unfortunately, has been led astray by the claims of the express companies and is following their lead in the cry that cheap parcels post means the transfer of their business to the big mail order houses. If such is the case—and we do not think it is—the advantage to the producer in enabling him to market his products in a small way will far more than offset this loss. But we believe there will also be an advantage to the storekeeper. His ability to replenish stock with greater ease under the improved parcels system will enable him to keep more up-to-date and so compete with the larger city stores.

In the matter of increasing the revenues of the Department we are not qualified to judge, but it looks to us as if the Department needed to do something in order to increase its income.

Christmas—Xmas

We recently saw in a communication to a newspaper the statement that whenever the writer saw an advertisement in a newspaper in which the word Christmas was written Xmas, he made up his mind never to buy from that store. His reason was that the contraction Xmas is an insult to Christianity, as he considered that the X is used in the same sense that it is in algebra, as standing for the unknown quantity.

While we agree fully with the writer in having a prejudice against the use of the word Xmas, we do not think he is correct as to meaning of the letter X in this connection. As we understand it, it is from the Greek form of "ch" which formerly stood for Christ, hence its use as a contraction in Xmas is not intended as a slur, but with the correspondent we hope the day may be honored by the use of its full name. It sounds better and is better. It is somewhat like the idiotic abreviation "Calif." for California. California is indeed a beautiful word. Let us honor our state by using it in full. Christmas is likewise beautiful and a fitting word; let us not be in such haste as to contract it. For our subscribers we wish it may be the merriest and happiest of days.

Vaudeville Fairs

A correspondent in an Eastern farm paper suggests that so long as the agricultural fairs, state, county and smaller, are all over at this time of the year, it might be well to discuss the advisability of a slight change in manner of handling them. From the trend of his letter we take it the Eastern fair management is much the same as in California; that is, live stock, agricultural productions and farm implements are tolerated as features of the fair, while vaudeville stunts, the pike and the midway where the barker reigns supreme, are the great central attractions. Advertising for the fairs makes much of these events. Of course the latest is a flying machine, which is essential to any self-respecting fair. After touching upon these features the writer says: "I would suggest that in place of 'vaudeville' we have contests of teams from all our high schools and colleges in all lines of games that are recognized as essential for students to keep up their physical development. I believe those who are simply seeking exciting entertainment, and have no desire to pay for a ticket unless they are offered such things are not the safest ones to have the welfare of the state placed in their hands. Those who are thoughtful and industrious are the ones who forward the welfare of the state."

Building Packing Houses

We note in the accounts of the spread of the exchange movement in Florida one step which we believe to be a mistake. It is in the forming of a syndicate to build for the growers packing houses which will be run by them. Having seen the perfect ease with which California growers have acquired and maintained their own packing houses, it occurs to us that Florida growers should likewise construct and own theirs. The plan proposed is for the growers to pay to the syndicate seven per cent interest, together with a sufficient sinking fund to cover the entire cost of the houses, and when all is done, the syndicate will own the houses. We believe one of the strongest points in the California Fruit Growers exchange plan is the ownership of everything from the start to the furniture in the Eastern offices.

The short courses in agriculture at the University Farm at Davis had a total enrollment this year of 152, or subtracting for registration in more than one course, the number of individuals was 119. The attendance at the University Farm High School for the school year which began in October is 77. While these registrations are not as great as they should be, they are an indication of the increasing popularity of the institution.

Seeds and Plants

We have the 1910-1911 Seed Bulletin of the Agricultural Experiment Station of the University of California and note the report of last year's distribution and a list of plants and seed for distribution this year. This bulletin may be had by addressing Prof. Wickson, Director of the Experiment Station at Berkeley.

For the year 1909-1910 there were 425 packages mailed and 1730 more of seeds distributed. These went to 55 of the 58 counties of California. The bulletin calls attention to the fact that these distributions call for report of the results of the year's trial, and to the fact that many of the recipients failed to make this report. The reports should be made to the Experiment Station, for sometimes it is as important to know what plants fail in certain localities as what ones succeed. Amongst the seeds offered for distribution this year are rust-proof wax butter beans, radishes, stringless beans, pepper cress, sweet peas, and others.

Farmers Institutes

J. B. Neff, Conductor of Farmers' Institutes for Southern California, announces institutes arranged for Burbank, December 28; Montebello, December 29; Lankershim, December 30. Another series is arranged for Imperial county from January 30 to February 4. This is the same series which was to have been held last week, but was postponed on account of the Imperial County Fair.

Cotton

The Bureau of Statistics of the Department of Agriculture reports that the total production of cotton in the United States this year will amount to five billion pounds, equivalent to eleven million bales. The greatest production by any state is that of Texas, [illegible],140,000 bales. Georgia is second with 1,750,000 bales. California is the smallest producer on the list with 12,000 bales. However, she is only 1000 bales short of the state of Virginia, one of the oldest producers.

Agriculturists who have felt the need of legislation more favorable to one of the greatest industries of the state have learned a lesson as to the manner of securing it. Too often in the past the matter has been delayed until the legislature was in session or perhaps half over, when bills were presented, to be followed by a good healthy grouch at the close of the session because nothing was accomplished by the introduction of the bill. Legislators-elect have this year been informed as to the needs of agriculture and proposed bills brought before them and fullest discussion entered into, and the opening of the state legislature is yet two weeks away. Fruit growers in the southern part of the state met with the assemblymen and senators in the city of Los Angeles and discussed questions which concern the fruit growing and agricultural interests. The result is that the legislators are going to Sacramento more fully informed and prepared to fully represent their constituents.

The legislative committee of the Farmers' Union of Washington met at Spokane and discussed matters of legislative interest to farmers, and resolved that the penitentiary jute mill should be run to its fullest capacity, and that bags be sold to farmers at actual cost.

Agricultural News Notes of the Pacific Coast

Northern California

Chico high school is the latest to install an agricultural course.

Sutter county orchardists have begun their winter pruning.

The dairy industry is having a great impetus at Willows, Glenn county.

Corning, Tehama county, ships weekly over $1,500 worth of eggs.

A million-dollar irrigation company has been organized in Tehama county.

There are over 2,000 acres devoted to olive culture around Oroville, Butte county.

The Alameda Sugar Company, at Alvarado, is planning to double its capacity.

Sacramento capitalists have located 250,000 inches of water and a reservoir site in Placer county.

Dry Creek, in Butte county, will be dredged and deepened, that the flood waters may find easier flow.

The recent poultry show at Petaluma claims the largest attendance of any similar function in the state.

Oroville has an ambition to be the olive center of the world, and from present indications will make good.

The demonstration train trip through the Sacramento Valley was a record-breaker in number of visitors.

One farmer near Suisun, Solano county, harvested fifty-four tons of tomatoes from two and three-quarters acres of land.

Rains have softened the ground at Pentz, Butte county, so that stock men are plowing and preparing for the planting of alfalfa.

The exhibit of Chico, Butte county, at the National Horticultural congress at Council Bluffs, Iowa, has secured six first and two second prizes.

The Sonoma County Berry Growers' Association has reorganized for the coming year, with J. J. Alves president and J. F. Lowary secretary.

A reclamation district has been formed in Siskiyou county which will bring under cultivation 8,400 acres near Etna and Fort Jones.

One co-operative marketing association in Sonoma county will handle during the coming year forty tons of loganberries, sixteen tons of Mammoth Blacks and seven tons of raspberries.

The rice harvested on the experimental farm at Willows, Glenn county, is of excellent quality, showing the long, clear kernel desired by rice farmers. Some difficulty is found in threshing, as the hull clings obstinately to the kernel.

Hayward, Alameda county, has in the last month canned over two hundred tons of pumpkins. Next year it is planned to more than double this amount, as the pumpkins are proving more profitable when prepared for pie-making than when used for stock feed.

A big force is at work rushing to completion the distributing system of the Orland Irrigation Project in Glenn county. It is expected that by the first of April water will be started through the canals and ditches. The completion of this system will bring 14,000 acres under irrigation.

Central California

Exeter's shipment of citrus fruits is in excess of 530 cars.

Kings county fish and game commission has released a number of Hungarian partridges south of Armona.

The San Jose Grange will hold a joint meeting with other county granges at San Jose on December 24.

A syndicate of Los Angeles capitalists has purchased lands near Delano which will be irrigated and subdivided.

The taxpayers of Turlock have voted bonds to the extent of $1,206,000 for the extension of their irrigation district.

Over 1000 dairy cows adjacent to Dinuba calls for the establishment of a creamery and steps are being taken to secure one.

Lindsay's orange shipping is nearly over and for the year ending January 1st it is estimated it will aggregate about 1322 cars.

Fresno's exhibit at the California Citrus Fair to be held at Sacramento in February will require five cars to transport it.

An effort is being made to extend the head of navigation on the San Joaquin river much higher up in the valley than it has ever been.

A mass meeting of raisin growers was held in Fresno last Thursday and plans were discussed for the new raisin warehousing plant.

The California Condensed Fruit Co. is contemplating a factory at Sanger for the manufacture of fruit syrups, catsups and canned goods.

Property owners should bear in mind that the state law passed in 1909 specifies that all lands shall be cleared of ground squirrels before January 31, 1911.

Riverdale Reclamation District No. 305, organized about a year ago, has brought suit against certain land owners to have an assessment levied declared legal and a lien upon the land.

There have been several battles between different factions of Fresno and Kings counties because of the building of the bridge by a railway over the Kings river.

The largest shipment of oranges ever made to a single firm from Tulare county consisted of fourteen cars shipped from San Francisco to Australia. The Australian demand is growing and promises a good market for California citrus fruits.

In his November report to the board of supervisors the livestock inspector of Fresno county announced that Fresno county is at last entirely free from the Texas fever cattle tick. For about a year the quarantined area has been confined to one township.

The committee appointed at the Stockton conference to propose amendments to the irrigation act is arranging for a meeting in the near future at Stockton to discuss changes in the law which will recognize securities of districts now organized as legal investments for banks, and other amendments which will make more saleable the bonds of irrigation districts.

Southern California

Huntington Beach sugar beet planters are already planting.

Mecca, Riverside county, is making its first large shipment of navels.

Anaheim irrigators are hoping to save water by cementing canals and ditches.

The cotton seed oil mill at El Centro hopes to be in operation by January 15th.

Some sections of Southern California are contemplating more liberal planting of olives.

Prof. Ralph E. Smith is again at work at the Southern California Pathological Laboratory.

This is not Southern California's dryest season, but it is dry enough that much concern is felt.

Antelope Valley farmers are finding excellent results in growing wheat under dry farming operations.

San Bernardino county horticultural commission is spending about $25,000 per month in fumigation work at this time.

Citrus growers are continuing their strenuous fight to secure reduction in icing charges where fruits are precooled.

Suit has been brought against the defunct Perris Irrigation District to recover $8000 due on bonds and interest.

Imperial Valley cotton growers have shipped about a dozen cars of cotton, sale having been made to the Oakland cotton mills.

Redlands orange growers have organized a fruit growers protective association. Over 3000 acres are covered in the membership.

Lancaster, Los Angeles county, is giving more attention to dairying, one of the largest dairy ranches having just been established.

Notwithstanding the biggest output of citrus fruits ever, prices are proving very attractive, even slightly in advance of last year's.

Orange county now anticipates another sugar factory between Santa Ana and Newport Beach and a 33-acre site has already been purchased for it. The plant will cost about $600,000 and will be ready for the 1912 crop.

The committee of seven appointed as the outcome of the Pomona Convention, has appointed a subcommittee of three consisting of A. F. Call, P. J. Dreher and G. Harold Powell, to present the needs of the citrus industry at Washington.

Five hundred carloads of brick, structural steel and other building material are to go into the construction of Anaheim's big new sugar factory. When completed it will have capacity to handle 600 tons of beets daily, and this capacity is to be doubled the second year.

The citrus association of Covina, Los Angeles county, has been selling fertilizer to all members at cost. At a recent meeting growers expressed themselves in favor of the proposed plan of having the California Fruit Growers' Exchange take over the fertilizer distribution business.

The Coast

Portland, Oregon, markets had offerings of home-grown raspberries at Thanksgiving time.

The annual poultry show of Walla Walla, Wash., will be held the week beginning January 16.

Farmers near Bowie, Arizona, are elated over striking a fine flow of artesian water at a depth of 490 feet.

Eastern fruit buyers have begun suit against growers and shippers for non-delivery of prunes at Albany, Oregon.

Spokane's Apple Show, which has been transferred to Chicago, is bringing many settlers to Eastern Washington.

The Oregon State Association of Butter and Cheese Makers met in annual convention at Eugene, Oregon, last week.

The holiday demand has cleaned up the bright red apples, and the Northwest Fruit Exchange is finding greater demand than it can fill.

Apple growers of Washington and Oregon are discussing plans for a more perfect fruit marketing organization for next year.

An asparagus grower at Kennewick, Washington, cleared from a twenty-acre tract over $16,000, and hopes for a $20,000 profit next spring.

The Hawaiian Islands have nearly doubled their output of sugar in the last ten years. Last year's output aggregated $55,000,000.

The Arizona Sentinel says: "The winter climate around Yuma is a thing so intoxicatingly salubrious that no words can describe it."

A woman at Phoenix, Arizona, has planted two acres to American Beauty roses, and is now exhibiting some magnificent specimens in the Los Angeles Chamber of Commerce.

The Yakima, Washington, Poultry Association will hold its next annual show at North Yakima the week beginning January 16. A fine line of silver cups is being exhibited.

Maintenance of the tariff on wool was the chief subject of discussion at the meeting of the Wyoming Wool Growers' Association, held at Sheridan, Wyoming, the first of the month.

Plans are under way for the formation of an association of the apple growers of Washington, Oregon and Idaho which shall have for its purpose the marketing of apples grown in the Pacific Northwest.

Oregon Agricultural College contemplates establishing a system of agricultural experiment stations throughout the state. Stations now proposed are in Southern Oregon, Harney Valley and Willamette Valley.

The poultry courses under the direction of the new instructor, Miss Lillian Blanchard, will be one of the new special features of the two weeks' farmers' course this winter at Washington State College at Pullman.

The Chief of Army Engineers recommends to the rivers and harbors committee of the House an appropriation of over two million for improvement in the Pacific Northwest, the bulk of this sum to be devoted to the Columbia river.

Coulson's
EGG FOOD

If you were going to erect a large building, you would consult an architect—if you wanted some legal papers drawn up, you would go to a lawyer—because these men have made a special study of their respective professions.

The same principle applies to the feeding of your chickens. Presumably you have not the machinery or formula for making an egg food so that it will be just what your hens need.

That's why you should buy COULSON'S EGG FOOD. It is the result of years of study—it is scientifically mixed by experts with the right proportions of the various ingredients to give a balanced ration.

COULSON'S EGG FOOD means a healthy stock, with great laying powers and eggs of quality. Saves you the time of mixing—provides a better feed—makes more eggs—means more profit, as COULSON'S EGG FOOD more than pays for itself, through making hens lay to their full capacity.

It is especially advantageous to use it at the present time, when the price of eggs is beginning to increase, and when also you are anxious to have your hens in good condition for the molting season.

Hens eat only what they like, but there are many foods they must have, and which must be mixed with their regular food so that they get the desired quantity. The only way the food can be mixed is by improved machinery—that's why you should feed COULSON'S EGG FOOD.

Get it at your dealer's; anyway send for our Catalog which tells about the famous Coulson products and gives valuable information about Poultry Raising.

Coulson Poultry & Stock Food Co., Petaluma
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Prairie State Incubators

The best—bar none. We are the agents. Car will arrive about January 1. Come in and see them. Or, send for Prairie State Catalog. We are also agents for the

Baby Buckeyes
50-Egg Incubator for $7.00

Did you ever hear the like? And with this guarantee, too: "Purchaser can operate it for forty days, and if it does not meet with his entire approval, it may be returned to us and the price paid will be promptly refunded."

Carload of these will soon arrive. They will go like hot cakes. If you cannot come in, send for a Buckeye Catalog. "Anybody can hatch chicks with a Buckeye."

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Rancho Mirasol White Leghorns
Eggs for Hatching, January to June. Day Old Chicks, March to June.
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When writing to advertisers mention the Cultivator

Practical Poultry Culture

FURTHER HINTS ON BREEDING EXHIBITION STOCK.

By H. F. Mann, San Jose.

Some time ago I wrote an article on double mating of Barred Plymouth Rocks, and I have since been thinking I should like to write a short article on general mating and breeding.

Besides double mating for color, there are many things to consider in breeding. In breeding show stock of any kind, one of the most important things in breeding is type. We have recently sold Barred Rocks to the butcher because they were off on type, and it is too much of a waste of time to breed from birds that are too badly off on type, when we have plenty that are of good type.

Next of importance is size. We have also sent beautiful specimens to the block because they were under size. Some might advise you to take these off-type, undersized specimens and breed them up, which might have been good logic fifty years ago, but if you undertake that now, the other fellow will be breeding and selling good ones while you are wasting your time in trying to establish a breed. My judgment is that you had better buy a few good ones of whatever variety you wish to breed, and then go on trying to improve them, for there are defects enough to keep you busy thinking in the very best you can buy.

No doubt some have told you that it does not make much difference what kind of females you have, so long as your male birds are good, but we have found it impossible to breed show winners unless you have the females of just as high quality as the male. Then, in mating up your pens, look your flock over carefully, and where you see a defect in your males, make it up in your females if possible, and vice versa. Lay aside all fads of your own, and take the American Standard of Perfection, and strictly adhere to it as to color, size, type, and, in fact, all points given in the Standard. If you have any trouble in interpreting the standard as to color, ask some successful breeder to point out the ideal color to you. If you are breeding white birds, get them as white as the froth on milk; if buff birds, compare them to a piece of gold money; and if red birds, compare them to a red ripe cherry; if black birds, imagine them black, very black, with your green veil spread over them. If parti-colored birds, words written or spoken cannot describe the color; you must see the color before you know it. Then, above all things, don't try to breed what you like, but try to breed what the judges like—that is, what the American Standard says.

THE PERCHES.

If there is anything about the furniture of the poultry house that needs careful attention, it is the perches, or roosts. On these the hens spend over half of their time, and it is quite necessary that they be hygienic in every way.

So many poultrymen have such high roosts that the fowls, in jumping down, bruise their feet, and the disease known as bumble feet results. Others place their roost poles in a stair form. This causes all of the fowls to crowd to the top roost, and, of course, the weaker ones get crowded off, and some are crippled or killed.

To avoid this difficulty, place the roosts on a level, and only sixteen or eighteen inches high, then when the fowl alight from the roosts there will be no danger of injury to them.

The reason fowls like high roosts is that in their wild state they learned to roost as high as possible, so as to avoid their enemies. I would rather see roosts only eight inches above the floor than to see them four or five feet above.

The kind of roost pole is quite important. It should be free of any creases or cracks where lice may find a lodging place.

They should not be smaller than two or three inches in width or diameter. A two-by-four, made round on one edge and placed on edge, makes a very good roost pole.

The poles should be placed so as to be movable, that they may be taken out and cleaned once in a while. The handiest way is to make a low trestle, and let the roosts set in notches cut in them. Make them solid, but do not nail fast.—Wisconsin Agriculturist.

CULL OUT THE FLOCK.

Every year we are impressed strongly with the necessity of culling the flock early in the year. November is the month when the flock, as well as the houses, must be prepared for winter quarters. Weed out all of the very late-hatched birds and dispose of them, unless you have ample room and time to care for them in separate quarters, and then only spend time with those that are exceptionally good. Late-hatched birds, when given only the same attention as the rest of the flock, never develop into first-class birds, and usually catch cold, or, being weak, are a prey to some disease and endanger the rest of the flock. Dress them for market early. This will give the pullets ready to lay and the rest of the flock more room to get into condition. One of the greatest drawbacks to the average poultry farm is that too many birds are crowded into too small quarters. Fowls, to do well, must have plenty of room. This gives them plenty of fresh, pure air and plenty of chance to exercise. By culling out the poor specimens you will also have the satisfaction of knowing that your flock contains nothing but fowls of the highest standard of quality.—Wisconsin Agriculturist.

GRIT.

Because chickens and hens have the run of the farm is no reason that they are plentifully supplied with grit. Where hens have been kept for several years the sharp grit is very liable to be exhausted, for they search over every part of their range daily, and often several times a day, eying sharply every bit of gravel, earthenware or glass, frequently picking up and dropping pieces when they seem uncertain about their sharpness. They will accept almost anything for grit that they can swallow, if it is only sharp.

Grit is the teeth of the fowls, and without it they cannot masticate their food and prepare it for digestion.

The poultry yard may be made up of gravel of the right size, and yet the hens suffer because the gravel is not strong enough to wear when it gets to the gizzard of the hen—her grinding mill.

If a supply of sharp, strong gravel

More Inventions by Lee

Here's his new Incubator door all are talking about. Perfect ventilation for the *first* time.

Mandy Lee Incubators

supply life-giving oxygen freely to the eggs and just as naturally draw off the poisonous gases. The most important step ever taken in incubator ventilation—neither above nor below, but *right at the eggs*—the correct principle, for the new Mandy Lee is making better hatches of *stronger* chicks than any other incubator in the world.

We Measure Everything

Heat—moisture—ventilation. You *guess* at nothing. If the eggs are good and you follow simple directions your work with a Mandy Lee is as nearly an absolute certainty as anything can be. There is no more reason why you should buy an incubator that regulates nothing but heat than for a farmer to continue to harvest his crops by methods and machinery used 100 years ago. Your success with poultry depends on your ability to select equipment that is *right*—that's what you *always* get from us.

No guessing with a Mandy Lee

Send *to-day* for new catalog. Learn of these new improvements and of our new *out-door, lamp-heated* and *regulated brooder*, just what is needed.

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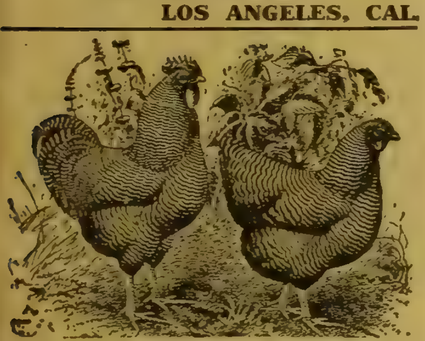

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Above are the kind of healthy chickens found on a ranch where Merval is used. Why not give your chickens Merval and have strong, healthy birds like these?

Merval will cure Roup in a week, and other diseases such as Canker, Chicken Pox and Diarrhoea in ten days.

Merval is also a fine tonic for run down hens. It puts them into condition again, which means more eggs.

Get a can from your dealer today. If he does not sell Merval, send us one dollar and we will forward you a one-pound can, postage paid.

Do it now. Remember, Merval won't cure dead birds.

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"Chicks well hatched are half raised"

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Orders booked for future delivery

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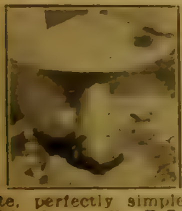
Henry Langenschwadt *SAN JOSE, CAL.*



The Arenberg Brooder Stove

Proven to be the most successful Brooder Stove on the market. Awarded gold medal for most Meritorious California invention at California State Fair, Sacramento, September, 1910. Burns distillate, perfectly simple and easy to manage. Write for details. **H. F. ARENBERG, Petaluma, Cal**

cannot be found in the natural pit, it must be provided from other sources. Poultry supply dealers sell crushed granite and quartz, and we keep it constantly before our birds, both chicks and hens, and are very certain that it is the cheapest and best substance we can get. There are two sizes, adapted to young chicks and fowls.—Wisconsin Agriculturist.

THE HEN HAS NOT LEARNED.

There is considerable to be extracted from poultry culture besides dollars and cents by the keen-eyed observer. True, the ordinary hen isn't so very interesting, but did you ever stop to study why any hen when a bunch of tender green stuff is given her proceeds to act like a simpleton in her endeavor to eat it? Instead of placing one foot on the green stuff to hold it fast while she pecks leisurely at the remainder, she will toss it wildly back and forth with beak as if she only possessed that one weapon of attack. Yet she will scratch like a fiend in the mellow garden soil, or on the soft turf of the lawn. All instinct, nothing more or less. The original hen acted in this way and so the hen of today does the same, just as the dog of today turns round before lying down because the wild dog of ages gone had to make this movement in order to form a bed of brakes or rushes for itself.

"My flock of Buff Wyandottes are great pets, and their house being next to my workshop, I have chances to watch them very often. Frozen chickweed is a favorite winter food with me and I have noticed that the hens will toss it about, throwing it over their heads and working hard to try to tear off a piece, instead of standing on it with their feet and so easily pulling it apart. It makes me nervous to see them "muggle' an undertaking so obvious. Now, in truth, the race of hens have always found their green food fast at one end, and so it has not become an instinct with them to stand on their food while pulling it apart with their bills, as is done by crows, hawks, eagles, owls, etc.

"What the race of hens has not learned to do by instinct apparently individual hens cannot learn. How long do you suppose would it take the race of hens to learn to stand on their food while eating it, provided all the food fed to the hens was in the form which made standing on it necessary? Judging by the intelligence of hens and by the tenacity with which they cling to acquired instincts, neither you nor I would be here when they had acquired this new instinct."—Julian Burroughs in Forest and Stream.

LARGE FLOCKS.

While a small flock may afford pleasure, because every member of the family becomes interested in caring for the fowls, large flocks demand labor. The actual cost of the food for each hen differs but little from that required for a small flock proportionally, and the profits are estimated by the difference between the cost of food and the receipts, when in fact the value of the labor is greater than the cost of the food in many cases, which puts a different aspect upon the enterprise. When the owner performs the labor himself he receives the price of that labor in the receipts.—Coleman's Rural.

The chicken is strongly influenced by habit. When raised in the chicken house no trouble is experienced in getting it to roost there.

FATTENING YOUNG ROOSTERS.

Answering an inquiry as to feeding young roosters, Wallace's Farmer says:

We have found it difficult to fatten a single bird by itself. If we wish to fatten one or two older birds, we put some half-grown chickens with them for company, and give a colony coop large enough to give a moderate amount of exercise.

Where one makes a business of fattening, crates with partitions giving each bird a stall should be provided; each stall having an opening in front and back of crate for cleaning out the droppings. We advise more room for a few chickens because unless arrangements are made for cleaning a small coop quickly and conveniently, it gets too filthy, or requires too much time in keeping it clean. The important thing in fattening is to feed enough, to feed regularly, and to kill the bird before it "goes off its feed" and loses flesh and quality.

If grain is scarce, better keep only a few hens, and feed them well. A laying hen requires plenty of food. Boil the vegetable parings each day, add table scraps, and enough ground meal and bran to make a mash. Feed a quart or more to twelve hens each day, give about a pint of wheat or oats in litter at noon, and at night a quart of wheat, oats or cracked corn. Keep them busy.

DRESSING A GOOSE.

To kill a goose, make a quick, sharp cut in the roof of the mouth below the eyes, or stun by a sharp blow on the head and then make the cut for bleeding.

The feathers are assorted while picking. The picker uses a box about the height of his knees, and holds the bird with the left hand, clasping the feet and wings together, and holding the head of the bird in place with the knee.

If the bird is to be scalded, use the same temperature of water as for a chicken, but dip several times, placing the back in the water first. A common practice is to wrap geese in a blanket after scalding to loosen the feathers, but the steaming must not last long enough to cook the flesh.

Do not dry-pick geese for the feathers before killing, as this causes the skin to become inflamed; and do not singe to remove hairs, as the heat gives the carcass an oily, ugly appearance. For market purposes, leave the feathers on the head, neck, wings at first joint, and tail. Pick the feathers from the body of the bird, then moisten the hand and rub the body to remove down. Geese are drawn like other poultry.

Poultry of all kinds, if dressed for the table, looks better when plumped by putting in scalding water for about ten seconds and then in clean, cold water—the colder the better.—Wallace's Farmer.

Here is a novel way for preventing fence flying: Take good strong string, and tie a knot about three inches from the end; then take the end nearest the knot and put it around the tip end of the one wing, and tie a slip knot below the knot in the string, so it cannot pull up too tight on the wing. Then pass the other end of the string under the other wing, and have it just loose enough so that the chicken can keep its wings folded naturally, and tie the same as other end. After it has been on about six weeks the string may be removed, and your chicken will stay in just as though it had never flown over a fence.

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No other Incubator in the world has a hatching record [illegible]

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MADE IN PETALUMA
Special Chick Food

The chick that dies is a loss. The chick that lives is a source of profit

Coulson's Special Chick Food

is the greatest life-saver known in the chicken industry. It makes weak chicks strong and healthy chicks even more vigorous. It costs less than 2c a chick to feed COULSON'S SPECIAL CHICK FOOD for four weeks. Don't experiment but buy the feed which has given years of satisfaction. After six weeks change to

Coulson's Growing Chick Food

It keeps the chicks healthy—makes them develop fast and brings them quickly to the point of profit-paying. If your dealer can't supply you with COULSON'S CHICK FOODS write us. Any way write for the free book "Poultry Feeding for Profit."

Remember our trade mark on every sack

Coulson Co.
PETALUMA CAL.

We are So. California Agents for
COULSON'S
SPECIAL CHICK FOOD
Germain Seed & Plant Co.
326-330 So. Main St. Los Angeles, Cal.

BABY CHICKS

Hatched from heavy laying stock of S. C. White Leghorn hens that have made Petaluma famous. Also baby chicks from selected S. C. Black Minorcas, Barred Plymouth Rocks and Rhode Island Reds. Send for price list.

Western Hatchery, Petaluma, Cal.
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WINSLOWS REDS
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Single Comb
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RED FEATHER POULTRY YARDS

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Bargains in Cockerels and Pullets bred from prolific winter layers.

DR. CHAS. E. WINSLOW
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WINTERS' WHITE INDIAN RUNNERS

The world's greatest egg producers. First, California State Fair, 1909. First, display pen; first, breeding pen; first, drake; first, duck and second, duck, at the Los Angeles show, 1910. Eggs for hatching.

WHITE AND BARRED ROCKS AND WHITE MINORCAS.

Eggs for sale in season.
C. O. WINTERS, 5307 Washington Ave., Los Angeles, Cal.
Phone, Sunset East 1197.

PETALUMA POULTRY AWARDS.

The special awards at the recent Petaluma Poultry Show were as follows:

Scrutton trophy for best male bird in show, Mrs. D. A. Robertson, San Jose. **Campbell** trophy for best female bird in show, J. P. McDonough, Geyserville. **Association** $5 prize for the largest entries, Jack Lee, Petaluma. **Association** $5 prize for second largest number of entries, William H. Hirsch, Irvington. **Association** $5 cash prize for the largest entry, any one variety, won by Jack Lee, Petaluma. **Lippitt & Lippitt** $50 silver challenge cup for best White Leghorn cock, cockerel, hen, pullet, cup to be won three times before it becomes absolute property of owner, C. B. Carrington, Haywards. **Petaluma Egg Exchange**, $20 cash prize for best pen White Leghorns, C. B. Carrington, Haywards. **Petaluma Incubator Company** trophy for best pair Mediterranean class other than White Leghorns, W. A. Tough, Petaluma. **Petaluma Banks**, $50 challenge cup for best Black or White Minorca cock, cockerel, hen and pullet, to be won three times, J. P. McDonough, Geyserville. **Association**, $5 for best display in Mediterranean class, William A. French, Stockton. **George G. Daunt** trophy for best cock, cockerel, hen and pullet in Polish and Dutch classes, C. J. Siegfried, Alameda. **Petaluma Banks**, $50 challenge cup for best pair of Barred Rocks, to be won three times, Moore & Mann, San Jose, 1909, 1910. **Petaluma Argus** trophy for best collection of White Plymouth Rocks, Mrs. D. A. Robertson, San Jose. **Merchants' Association**, $50 challenge cup for best White Wyandottes, cock, cockerel, hen and pullet, cup to be won three times before it becomes the absolute property of owner, won by A. L. Jenkins, San Rafael, 1910. **Petaluma Incubator Company** trophy for best collection of Wyandottes, J. Stansfield, Fruitvale. **Coulson Company** trophy for best collection of Rhode Island Reds, Jack Lee, Petaluma. **Association** trophy for best Rhode Island Red, Jack Lee, Petaluma. **Association**, $5 for best display in American class, J. Stansfield, Fruitvale. **Association** trophy for best pair Houdans, D. H. Anderson, Petaluma. **Association**, $5 for best display in French class, Jack Lee, Petaluma. **A. H. Ross** trophy for best display of White Orpingtons, W. H. Ingram, Fruitvale. **A. L. Jenkins** trophy for best display Black Orpingtons, Vincent Huntley, Petaluma. **Petaluma Incubator Company** trophy for best collection Buff Orpingtons, W. S. Macy, Santa Barbara. **Petaluma Incubator Company** trophy for best Buff Orpingtons, W. S. Macy, Santa Barbara. **Association** trophy for best Buff Orpington male, W. S. Macy, Santa Barbara. **Association** trophy for best Orpington female, W. S. Sullivan, Agnew. **Trophy** for best Buff Orpington cockerel, W. S. Macy, Santa Barbara. **Association**, $20 for best Buff Orpington pen, W. S. Sullivan, Agnew. **Association**, $5 for best display in English class, Mrs. S. Swaysgood, Healdsburg. **G. H. Croley** trophy for best cock, cockerel, hen and pullet in Asiatic class, William A. French, Stockton. **Association**, $5 for best display in Polish and Dutch classes, C. J. Siegfried, Alameda. **Petaluma Poultry Journal**, trophy for best collection of any one breed Ornamental Bantams, Henry A. Hoyt, Santa Rosa. **Association**, $5 for best display Ornamental Bantams, Henry Hoyt, Santa Rosa. **Association** trophy for best collection ducks, Vincent Huntley, Petaluma. **Association** trophy for best collection turkeys, Ed. Hart, Clements.

Petaluma Courier trophy for best display in novice class, Duncan Lee, Petaluma. **Association** trophy for best display any recognized variety not yet admitted to American Standard of Perfection, Goodacre Bros., Compton. **Association** trophy for best display Cornish Indian Game, Richard Keatinge, Palo Alto. **Association** trophy for best display Bantams, Hehry Hoyt, Santa Rosa. **Association** trophy for best collection geese, William Hirsch, Irvington. **Association** trophy for best display Silver Penciled Wyandottes, Mrs. George Grindell, Haywards. **W. S. Sullivan** trophy for best Buff Orpington birds raised from his eggs or from stock, R. A. Kingman, Petaluma.

The National Single Comb Buff Orpington Club held its Western Branch meet at the rink, and offered prizes for competition by the members only. Handsome cup for best cock, cockerel, hen, pullet, pen and display. Cock, R. A. Kingman, Petaluma; cockerel, W. S. Macy, Santa Barbara; hen, W. S. Sullivan, Agnew; pullet, W. S. Macy, pen, W. S. Sullivan; display, W. S. Macy.

HENS KNEW THEIR BUSINESS.

There is a German dairyman and farmer whose place is not far from Philadelphia who greatly plumes himself upon the absolute superiority of his products above all others in the vicinity.

On one occasion he personally applied to a Germantown housekeeper for a transfer of her custom to himself. "I hear dot you haf a lot of drouble with dot dairyman of yours," he said. "Yust you gif me your gustom and der vill be no drouble."

"Are your eggs always fresh?" asked the woman.

"Fresh!" repeated the German, in an indignant tone. "Let me dell you, madam, dot my hens nefer, nefer lay anything but fresh eggs?"—Rural World.

A surprisingly large quantity of poultry coming to market is not fasted before killing, and often arrives with crops full of food and protruding. This distended crop is decidedly unsightly, and perceptibly lowers the appearance of the birds. Why will not people learn that a bird's crop gorged with food is a handicap to its sale. Moreover, it distinctly lowers the quality of the flesh as well. It has been demonstrated that the flesh of poultry that fasts for from twenty-four to thirty-six hours before killing is more delicate of flavor and of better keeping quality than those which have food in process of digestion at time of killing.

Max Muller, one cold winter day, reviled his fowls, that did not lay, blasted pullets and cussed the cocks, anathematized his numerous flocks, and vowed he'd sell them all for soup, for lack of business in the coop. He'd fed them oats and fed them wheat, chopped-up barley and scraps of meat, condition powder and oyster shell, all the diet they liked so well. He'd used trap nests and all of that—they just laid 'round and put on fat.

For canker in fowls, the following remedy is recommended: Mix 12 drops carbolic acid, one teaspoonful laudanum, 10 cents worth sugar of lead, five cents worth sulphate of zinc, and one pint of water; shake well. Open up the nostrils with a broom straw, and with a small glass syringe inject into them the mixture, three times a day, and put eight to ten drops in the mouth. Feed soft bran and give plenty of water.

Pullets cannot mature rapidly when half fed, and must be fairly fleshy before they will begin to lay. This is the reason why the owner should pick up the pullets once in a while and handle them over to see whether they are fleshy or not, and also to see if they are troubled with lice. A pullet troubled with lice will not lay early. If they are troubled at all, they should be attended to at once.

Hardy parents beget hardy offspring. If we neglect in this particular, each succeeding generation will be more delicate. No fowl should be used in the breeding pen that has had a case of serious illness. No matter how sure we may feel that full health has been restored, there is still some taint of disease remaining in the fowl which will be inherited by the young. Inbreeding has caused more weakened constitutions than anything else we know of.

The poultry business is no longer a mere matter of rearing a few fowls in an old tumble down building, in a careless, slipshod way, nor a matter of experimenting with fancy breeds by a limited number of enthusiasts who enjoy pursuing a "fad." The business is a national industry and adds each year millions of dollars to the produced wealth of the country.

It will always pay to have a place to coop and feed for a week or two all fowls intended for market. They take on flesh very rapidly when cooped and fed all they will eat, and the flesh is of better quality. Indeed for one's own table it would be profitable to keep a few in the fattening pen at all times; then there would be no trouble catching one on short notice, and no doubt about the fowl caught being fat enough to kill.

It is much better to buy a ready-made incubator than it is to buy plans that tell you how to make one. Not all of us are carpenters and tinsmiths, and it is a difficult thing for any one else to make a successful incubator, no matter if you have complete plans to follow. If you desire to practice your hand at carpentry do so in the making of good chicken coops, rather than on incubators and brooders.

The
Thomas Hatchery
Produces
FIRST CLASS
BABY CHICKS
White Leghorns
a Specialty
Now booking orders for
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I'll Start You in Poultry on the Make-Good Plan

—Set you up in a paying business all your own—a business you can control and expand indefinitely—one you can operate on little capital and in small space—one that will give you real independence, pleasure and profit. Mail me a card to-day for my book containing the remarkable terms on which I am selling Queen Incubators and Brooders, freight prepaid. I have started over 61,000 people on the road to success. The Queen goes out on the make-good plan, the most liberal ever offered on a high grade incubator. My 1911 Poultry Guide and Catalog explains terms fully. It's a down-to-date poultry book, practical, concise, helpful—best book of the kind published. Write and let me mail it to you free.

WICKSTRUM, Queen Incubator Man, Box 53, Lincoln, Neb.

All Metal Incubators and Brooders
SIMPLE — SAFE — DURABLE
The result of 25 years experience, and the most Practical Incubator made.
Cycle Hatchers $6.50, Brooder Hatchers $8.50
FIRELESS BROODERS THE KIND THAT RAISE THE CHICKS
THE PHILO SYSTEM
Philo System Book and Poultry Review (one year) $1.00.
READ WHAT OTHERS SAY:
117 Miles Ave., Oakland, Cal., Nov. 12, 1910.
CYCLE HATCHER Co., Oakland, Cal.
Gentlemen: A year ago we started with the Philo System, and raised as fine a lot of White Orpington pullets as anyone would wish to see. The two machines we purchased of you last season have given excellent satisfaction. We shall probably need more this year, and shall use the CYCLE machines in preference to a large incubator. Yours truly, S. N. HAINES.
Send for "Poultry Profits." Mailed on request.
CYCLE HATCHER CO., - - - OAKLAND, CAL.
Warehouse at Los Angeles, Cal. Address all correspondence to Oakland.

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Remember
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AGNEW, Santa Clara County, California

Irrigation and Forestry

THE SCIENCE OF IRRIGATION.

"Had I irritated the vines once more I would have raised enough taters to consume the family," is the way an old-timer, in one of the fertile valleys of the Colorado river, complained at not having all the water he wanted for irrigating purposes.

His language was a little mixed and so was his mind. For his crops did not need more water but better cultivation. The potato contains a good supply of water but it insists on having that come in the form of soil moisture. That is conserved and properly distributed by using right methods in tilling the soil.

An eastern farmer located in the Okanogan valley of Washington, had decided to plant a crop of potatoes. It was necessary, for the family needed potatoes. The land was not irrigated, for the reason that no canal had been constructed to carry water to the field. The soil moisture was that held, by the earth, from rain and snow of winter.

The settler plowed the land and planted the tubers. He had this much assistance—soil with plenty of plant food, moisture, stored near the surface—and sunshine, coming from over the mountains. When the seed was planted the farmer began harrowing the surface of the earth. That caused some of the natives to wonder what he meant. When the plants showed above ground the harrow was dragged over them. Then the old-timers collected in groups and talked about the man and his harrow.

Six or eight times during the season from planting to blossoms, the potato crop was given surface cultivation. Then came the surprise. For at digging time, the tenderfoot had the best crop, finest quality and most perfect specimens of potatoes grown in that section. He did not wait for rain or water to irrigate the vines. He cultivated in the dust and sand and assisted nature in giving out the moisture she had conserved.

Go out in the open market and buy two bags of potatoes, shipped from an irrigated district. Put them to the test, by cooking in any of the many ways of preparing the tubers for food, and notice results. One will be mealy, fine and tasteful. It came from the field where the man had learned the art of applying soil moisture at the proper time. That man communed with nature and catered to her desires. He studied the soil and its composition for the purpose of reaping profits from his labors.

The second bag of potatoes does not give satisfaction. The tubers do not look just exactly right. Small growths show imperfect maturing. The cooked tubers are sad and blue. The cook wants no more of them and says they are too watery. And there is something wrong with the flavor. Those potatoes came from the same section as the other bag, but they were grown by the man who plants and waters his crops. He gives no thought to nature or her requirements in moisture and cultivation.

To succeed, in an irrigated country, the farmer must be a man of good business judgment. It is not necessary that he should be a class graduate from some commercial school, or be familiar with the theories of teachers in political economy, in musty college halls. But he cannot grasp the full measure of soil wealth without careful and studious labor. That explains why townsmen often fail in attempts at developing farms. Irrigation cannot be handled by any system of absent treatment.

Man is master of the situation when he enters into partnership with modern irrigation. Nature recognizes his superiority and comes to his assistance. She wants a husbandman who will give her a chance to make a creditable exhibition of the results of the wedding of such personages in the world of production. If man fails to perform his part of the work nature will show her resentment of such treatment in inferior crops, worthless weeds and other signs of shabby abandonment.

Comparisons are generally odious but not objectionable when used to illustrate the difference between failure and success. For that reason two farmers are brought to the front in this paragraph. One had a large tract of land, with plenty of money to develop the alfalfa industry. He lived in town, spent much time at nickel-in-the-slot machines, and let the water run, in plats, surrounded by dams. He cut and stacked an average of less than six tons of hay to the acre.

In the same community a practical farmer, living on the land, had several acres planted to alfalfa. He irrigated by the furrow method and kept himself busy to see that the water did not form in ponds or wash out the plants. He harvested an average of more than ten tons of alfalfa hay to the acre. And his hay was worth more to the ton than that which was grown under varying conditions of surplus water and crusted earth. One man studied the needs of the soil and the other criticised the newest brands of cigars.

There is such a thing as excessive moisture, even in the land of irrigation. Passing through a ten-acre field of corn I noticed that in the center of the field the ears were well filled, the stalks perfect and the growth natural. At the end of the rows, next the irrigation main, the stalks were short and yellow and many had not even poorly formed ears. At the bottom of the field, where a waste ditch should have been dug, to carry away the surplus water, the corn was almost a failure. The lesson is plain enough.

If rows are too long the crops next the main get too much water because of it having to remain too long in the furrows. No crop calls loudly for water at its roots. Moisture is what plants require. That should be given and the irrigation brought to a close. Measurements of the flow of ditches, passing to given areas, have shown that the land received as high as 70 inches of water, during the growing season. That was about three times the amount required to make good crops. It did not benefit the plants and certainly did damage the soil.

One year I had a patch of corn fall down and waste because of too much water. That was before I had learned, by practical experience, the duty of water and the demands of the soil for moisture instead of water. On examining the roots I discovered that they did not branch out but formed a wall of defense, much like oyster tongs, trying to protect one another from the attacking storms of water, poured forth every ten days. A few rods away the corn stood up and sent out rootlets far above the surface. They were grown under normal conditions, and went out in all directions, seeking moisture.

Utah is revered as the mother of irrigation. It was there that the pioneers of many months on the desert cast anchor, and staked claims on the shores of Salt Lake. They arrived late in the season—July 24, 1847—but not too late to plant crops. A plow furrow led the waters of City creek out upon the land. That was rich in potash and phosphoric acid and had been collecting fertility for centuries. It required only moisture and cultivation to make it produce crops. And they grew and made a city, county and state.

In one of the isolated districts of Utah, known as Grand valley, is a pioneer, whose fruits are exhibited at the state fair every year and his name is often heard among those seeking success in irrigation. That man is O. W. Warner. He was the first settler in Grand Valley. A quarter of a century ago he drove his team with a wagonload of fruit trees and family, into that promised land. An irrigation canal was plowed out from Pack creek, and the work of starting a home framed for action. Nature had done all she could and awaited the assistance of man.

Years came and went in the history of time and that man prospered. Neighbors entered the valley and new farms were made from the desert. Finally he erected a magnificent residence, said to have cost $9000. Then people began to wonder how much could be made from a small farm, such as he commanded. For only the level land, that could be irrigated, was held for cultivation. The surrounding hills remained in their old desert condition.

A local paper published a statement of assets, made by the pioneer of that valley. It was interesting because it showed the possibilities of irrigation and the cash opportunities for others in developing arid lands. The tract consisted of 74 acres. From that he sold peaches, apples, pears, grapes, wine, plums, apricots, barley, wheat, oats, corn, potatoes, alfalfa seed, honey and live stock valued at about $8000 for one year. At that rate what

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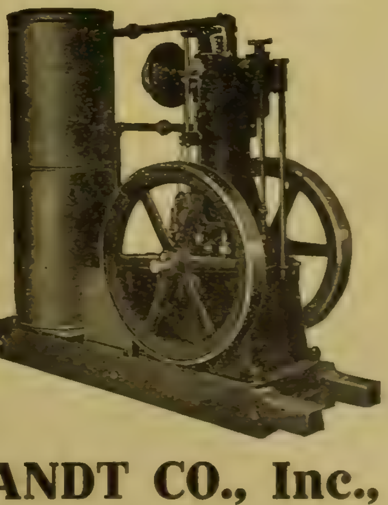

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The Fruit Growers' Guide. Aside from describing 2000 varieties of trees and plants, contains practical instructions for planting and care of stock, also pruning and cultivating.

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Be sure to mention this ad when writing.

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would be the market value of 74 acres, from which the crops were produced?

Many lessons were brought out in the work of that pioneer. He had a surplus of something to sell every day in the year. His hobby was not any one thing but to produce the most and best of all things the land would permit. He might have been seen almost every day, except Sunday, in the fields, with others, cultivating the earth. The matter of irrigation did not receive so much thought, for it was merely one of the combination of forces in successful soil handling, that did not need application until crops called for moisture.

This is a pioneer story because all of the West has not been settled yet and there are hundreds of places for the pioneer to enter upon virgin soil and develop its possibilities. But there are other reasons for writing pioneer stories of irrigation. For while one man succeeds in handling the gifts of nature another fails and the lessons are to be taken from the successful farmer. Nothing can be learned from the man who is a failure in his life work. He simply stands out as a living monument to warn others not to follow in his footsteps, because they might lead to the same landing on the shore of time.

An example of failure may be cited in the history of this man. He located on 160 acres of flat, sandy bottom land. The entire tract, with the exception of a few rough spots, was put under cultivation. A wire fence enclosed the place and kept out intruding stock. It was planted to alfalfa, grain, potatoes, beans and corn. But the man did not make a financial success of the venture. He gave all his time to irrigation and had no opportunities for cultivation. The crops failed to give profitable returns for the reason that only one element of production was noticed, that was irrigation, and without the others in the combination, it was a bar to successful dealing with the soil.—National Irrigation Journal.

NATIONAL FORESTS.

For the fiscal year ended June 30 last, the United States Department of Agriculture announces the 25 per cent, of National Forest revenue which will go to the states for road and school purposes amounted to $506,194.84. This was $67,492.03 more than last year, or an increase of a little over 15 per cent. The payments are an offset to the loss of income from taxable property sustained through withdrawal of the forest land from entry under the public land laws.

The amounts which will go to the various states are as follows: Arizona, $51,229.38; Arkansas, $2,904.44; California, $60,752.91; Colorado, $50,506.19; Florida, $706.38; Idaho, $66,074.55; Kansas, $1,004.67; Minnesota, $457.37; Montana, $83.678.38; Nebraska, $2,820.25; Nevada, $16,314.33; New Mexico, $28,529.53; North Dakota, $63.64; Oklahoma, $626.10; Oregon, $39,635.87; South Dakota, $9,808.93; Utah, $32,905.49; Washington, $23,671.89; Wyoming, $34,704.54.

Noteworthy is the especially heavy increase over the amounts last year in certain States. In California the amount rose by over 25 per cent, in Idaho by over 35 per cent and in Oregon by nearly 50 per cent. The increases are the result of increased activity in National Foest timber sales in these states and are an earnest of what will happen as the timber supply which the Government is caring for comes into full demand. Since the cut of timber will always be limited to what the forests will keep on growing, the income to the states will be permanent, not transitory, as would have been the case if hasty and improvident exploitation had been permitted. According to the calculations of the Department of Agriculture officials, the states will eventually receive many times what the forests are now yielding them, for there is as yet on the whole only a very restricted demand for the Government's timber.

GREAT CO-OPERATIVE IRRIGATION PROJECT.

The greatest and most successful co-operative enterprise in the state of California, perhaps not surpassed in the world, is that presented by the Modesto irrigation district, of which the city of Modesto is the center. This enterprise, which in a few years has converted 100,000 acres of land from biennial grain fields to perennial alfalfa fields, vineyards and orchards and added $15,000,000 to $20,000,000 to the market value of the lands embraced within the district, is at the same time the most significant industrial development of the state, its influence far reaching. It comprises one of the greatest irrigation systems in the world, constructed by the land owners themselves at a cost to date of about $3,000,000, and is owned in perpetuity by the land. It is not owned by the land owners, for the irrigation right and use attaches to the land itself and cannot be alienated.

This irrigation system consists of a diverting dam of concrete masonry and 300 miles of main and lateral canals. Fully 256,000 acres of land shares equally in the ownership of the system.

This land lies in the bed of the San Joaquin valley, in that political division known as Stanislaus county, at the northern end of the valley. The soil is sedimentary, a sandy loam. For 30 years it was farmed exclusively to cereals, the average rainfall of about 10 inches prohibiting other crops. Appreciation of the possibilities of development under irrigation and the presence of an unsurpassed water supply at the door in the Tuolumne river led to an agitation late in the eighties that resulted in the organization of the Modesto and Turlock irrigation districts. It was not until 14 years later, however, that any portion of the works was so far completed that irrigation became possible. From that time there has been a large and steady influx of settlers, 100,000 acres are now under irrigation, new towns have sprung up, old towns have doubled and trebled their population and evidences of prosperity and development abound.—National Irrigation Journal.

Irrigation means intensive cultivation. To make irrigation a success, three requisites are needed, soil, brains, and water. If you have the soil, which is important, the crop will be productive. With regard to the brains—more brains and less water should be the slogan. More failures result from too much water than from a deficiency of water. Many times the irrigation farmer forgets that in order to have good irrigation, he must have good soil drainage. The U. S. government drainage engineer told the editor the other day that there were over 800,000 acres of irrigated land that had been ruined by applying water too freely, and the question now is, how to regain those acres by a good system of drainage.

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Deep Well Pumping For Irrigation.

The past season has demonstrated more than ever the practicability and superiority of the Pomona Deep Well Pumps. It is fully proven that it is possible to lift large quantities of water from very deep wells with a surprisingly small amount of power. It has usually been considered that a plunger pump is only good for a 35-inch stream on a lift of say 200 feet, but the Pomona Manufacturing Company have demonstrated that it is no longer necessary to use a centrifugal pump, with its wasteful usage of power, to get a large quantity of water out of the ground, as this company is manufacturing extra large size cylinders including 12, 13, 14 and 16 inches in diameter, and capable of lifting from 50 tc 100 miner's inches of water. Not only that, but they are prepared to go down after it to depths of 300 and 400 feet if necessary.

They have one plant at Claremont where the water stands 390 feet below the surface and the pump has a total lift of 450 feet, delivering 45 miner's inches of water with 60 H. P. on the motor, and doing it easily. There is another plant in Ontario lifting 60 miner's inches 300 feet with a 60 H. P. engine.

The parts below the surface have been so perfected that they are perfectly reliable and are giving as little trouble as it is possible for a machine to do. Other pump makers, noting the wonderful success of the Pomona Pumps, are trying to imitate them, promising something just as good, but they are only imitators and have not the knowledge or ability to make their claims good.

The Pomona Manufacturing Company has a large plant at Pomona, the only one in Southern California, devoted almost exclusively to manufacturing Plunger Pumps. They are a reliable establishment and are here to stay, to make good their guarantees and to supply your wants in the way of extras or assistance. Their machines and apparatus have been tried out and their value fully demonstrated.

Anyone needing pumping machinery should send to them for catalogs, or visit them in person.

Placentia Perfection Walnuts
Grafted on California Black
Eucalyptus Trees and Seed
Sunset Nurseries, Tropico, Cal

Queries and Replies

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Glass Bells.

Where may I secure glass bells to hasten growth of vegetables in early spring?—Subscriber, Bell Flower.

We think any seed house advertising in the Cultivator can supply you. We think the cost prohibitive from any economical standpoint.

Almonds.

What is the cause of my almond trees dying? Some are two and some three years old. Part of them started out in the spring. Can you tell me the cause and what I can do to keep the replant from dying also? Our soil is a deep granite and well drained.—Subscriber, Roseville.

This is one of the cases where not enough particulars are given to make up an intelligent answer. The querry was submitted to one of the best almond growers in California, and he answers that he is unable to offer solution.

Alfalfa in Peach Orchard.

Is it advisable to grow alfalfa in peach orchard? Trees were planted four years last spring. Will alfalfa irrigation affect the trees?—Subriber, Fowler.

The peach trees will not do as well with the alfalfa as they will without. It has been shown that an orchard covered with sod produces 40 per cent less fruit than by clean cultivation. This may not be the case where alfalfa is grown and an abundance of water supplied, but the returns for fruit will be less. The frequent irrigation would tend to make the fruit softer and not good for shipping, neither would it be so good for drying.—J. B. N.

Fencing Against Gophers.

How deep will it be necessary to dig to put in planks or cement or wire to fence against gophers and moles which come in from adjoining lands? They come to my place by the dozens from surrounding lands which are unimproved. I am using traps, but it is such a continual fight that I would like to fence against them if possible.—Subscriber, Santa Barbara.

We imagine it would be necessary to go down two feet and that fencing to such depth would prevent the encroachments of the pests. We will ask our subscribers to give of their experience. It must also be borne in mind that the gopher travels long distances above ground to find new "pastures."

Fertilizing Peas.

On very light, sandy soil how much nitrate of soda, potash and superphosphate should I put on a row of peas fifty feet long?—Mrs. A. C. D., Bell Flower.

We would put 1½ pounds of nitrate of soda on the row and be sure not to get too close to the plants. Scatter or sow in strip two feet wide each side the row. We would try this without the potash and superphosphate, and think results will be satisfactory.

Almonds.

What kind of almonds is best for this section? Where can I buy the trees? Have reddish soil excellent for oranges. How long before they begin bearing; how long do trees live; how about irrigation and general care?—Subscriber, Lindsay.

We would not plant almonds in your section, especially on land well adapted for oranges. As to time of planting and general care, follow the same plan that you would with peaches except that almonds require somewhat less irrigation. The blooms come very early and will stand but little frost, and unless your section has proved itself adapted to these nuts, we would experiment before planting extentively.

Pecans and Filberts.

Will pecans and filberts do well around Riverside?—Subscriber, Magnolia Avenue.

We do not think we would plant these nuts in Riverside. Trees grown in the section, however, are the best answer to that question. The pecan has proven especially well adapted to all parts of the South where there are cheap lands much closer to the market, and we imagine California's high priced land could be used more profitably in some other fruit.

Walnut Scions.

Is it good practice to take scions from a walnut tree which is grafted on black stock?—G. B., Gridley.

The stock would have no influence whatever on the quality of the scions, at least as to changing in any way the character of the nuts.

Peafowls.

Where can I secure peafowls and guineas, and what is their cost?—Subscriber, Santa Maria.

This question is often asked of the Cultivator and we refer it to our subscribers who may be breeding this stock.

Chicken Manure.

What is the best way to use chicken manure as fertilizer?—Subscriber, Bakersfield.

Apply as soon as possible to the soil and work under. This is the surest way of preserving all the fertilizing properties. It is claimed that it should not be allowed to dry. If it is not put upon the soil at once, compost so that it will not lose any value through leaching away by the rains and otherwise.

Fertilizer for Walnuts.

Can you recommend commercial fertilizer for walnut trees? Vetches and peas are desirable, but owing to the gathering of the crop and the lateness of rains, especially this season, it has been impossible to plant in time to get a season's growth. Land is black adobe, and if possible to get an honest grade of fertilizer. will use it. Trees are about 17 or 18 years old.—Subscriber, San Jose.

Our subscriber must bear in mind that commercial fertilizer to do well must be applied to a soil in which there is plenty of humus, for no matter how rich a soil may be in the elements required for plant growth, humus is requisite for proper bacterial and chemical action. If vetches and peas will not grow owing to the short cool season, we would recommend the use of rye. It grows rapidly in the cooler weather and supplies a vast amount of humus, though of course it has no value as a nitrogen gatherer. The acids it supplies to the soil, together with the mechanical conditions created, fit the ordinary commercial fertilizer for the use of the roots. We would recommend also that in February or early March you make an application of 200 to 400 pounds per acre of acid phosphate

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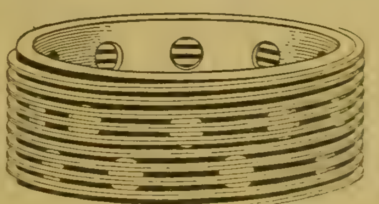

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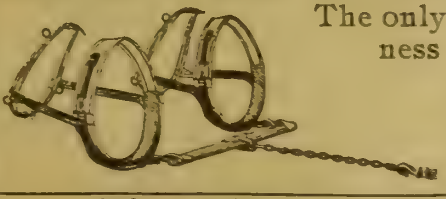

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California Cultivator Clubbing Price List

FOR THE SEASON 1910-'11

Prices are Good to Oct. 1, 1911

This magazine price list is prepared annually for the convenience and benefit of Cultivator subscribers. The prices given allow our readers the benefit of the lowest figures possible, in return for which, all we require is that to all orders a year's subscription to the Cultivator (class 18) be added at 90c (regular price $1.00 per year).

This year the pricing of various combinations of magazines is a simple matter; all are listed according to class number and this class number multiplied by 5 gives the cost price.

EXAMPLE:

Class No.		Regular Price
20	American Magazine	$1.50
16	Delineator	1.00
37	World's Work	3.00
18	Cultivator	1.00

91X5=$4.55. Club price for all. Amount saved on this club, $1.95.

We desire to especially call attention to this complete list of the most popular magazines. We can, however, supply any periodical published, at the lowest price, and any not listed here will be quoted on request. Let us make you a price on any combination you may desire.

Periodicals in any combination may be ordered to the same or different addresses. Foreign or Canadian subscriptions are extra on account of added postage and prices must be gotten by correspondence. Subscriptions may be either "new" or "renewals," but it is important that this information be given in each case.

Books—Send us a postal for our list of agricultural books which we supply subscribers and which we recommend as most suited to California conditions.

Don't overlook this special:

The California Cultivator (weekly)
The Rural Californian (monthly)
Both one year for $1.50

Our Money-Saving Combinations:

The price of the Cultivator and any single magazine may be obtained by adding 90c to the class price of the magazine desired.

Make up your orders from the following, noting that the class numbers multiplied by 5 gives the cost price. **Also bear in mind that all orders must include a year's subscription to the Cultivator (class 18) at 90c.**

MISCELLANEOUS

Class No.		Reg. Price			
19	American Sheep Breeder	$1.00	8	Ladies' World	$0.50
47	Automobile	3.00	17	Human Life	1.00
8	Boys' World	.50	9	McCall's Magazine	.50
23	Breeders' Gazette	1.75	12	Modern Priscilla	.75
27	Cassell's Little Folks	1.50	15	National Monthly	1.00
77	Century Magazine	4.00	70	North American Review	4.00
65	Country Life in America	4.00	47	Outing Magazine	3.00
12	Designer	.75	8	Reliable Poultry Journal	.50
8	Girls' Companion	.50	40	Scientific American	3.00
70	Harper's Weekly	4.00	60	Scribner's Magazine	3.00
70	Harper's Magazine	4.00	57	St. Nicholas	3.00
			15	Woman Beautiful	1.00
			37	World's Work	3.00

CLASS 16.

Amer. Agriculturist	$1.00
Black Cat	1.00
Cooking Club Mag.	1.00
Delineator	1.00
Health	1.00
Housekeeper	1.00
Judge's Library	1.00
Judge Quarterly	1.00
Orange Judd Farmer	1.00
Pacific Monthly	1.50
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Progress Magazine	1.00
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World's Events	1.00

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Any three $2.40
Any four $3.20
Any one with 1 of class 17 $1.65
Any two with 1 of class 17 $2.45
Any one with 1 of class 20 $1.80
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CLASS 17.

Amer. Bee Journal	$1.00
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which carries 17 or 18 per cent of available phosphoric acid. Apply this before plowing so as to force as deep into the soil as possible. With heavy chain force under as rank a growth as can be secured from the rye and then apply on surface, say 150 pounds per acre of nitrate of soda, which cultivate thoroughly, then later, say in April, apply another 150 pounds nitrate. We think our subscriber can depend, if he wants to use commercial fertilizer, on the quality as indicated by the analysis which must be given with every package. The Fertilizer Control at Berkeley can inform him as to the worth of the goods he has purchased, and will make only a nominal charge. If perfect confidence is not placed in the fertilizer vender, that will be the safest procedure.

Pomegranates from Seed.

Will seed of pomegranates bring fruit of same quality as the parent bush? If so, when is the best time to plant? I recently secured a large red pomegranate weighing three-fourths of a pound. The outside skin was blood red and the pulp a much deeper red than others growing in this vicinity.—Subscriber, Chino.

We think any nurseryman can supply our subscriber with rooted plants of the red pomegranate which will probably grow as good fruit as the one mentioned. They do not come true to seed and are usually propagated from cuttings. If cuttings can be had from plant which bore this fruit, it will produce fruit like the original, will bear more quickly and be more desirable.

Possibly Mealy Bug.

I have a solanum jassminoides of very luxuriant growth on east side of dwelling. I note what I think must be cottony cushion scale on under side of vine against the house. What can I do to destroy it?—K. C. M., Los Angeles.

We fear this is not cottony cushion scale but mealy bug, which is almost impossible to eradicate, but the infestation should be destroyed, even if necessary to destroy the plant before it escapes to other growth. If it is the cottony cushion scale, we would recommend our subscriber to write to J. W. Jeffrey, State Horticultural Commissioner, Sacramento, for colony of novius cardinalis which will handle it perfectly.

It may not be necessary to destroy vines if they can be sprayed with carbolic spray advised by Mr. Essig and formula for which is given in the Cultivator of November 3rd, or the F. & G. Spray advertised by the Western Wholesale Drug Co., of Los Angeles, can be used.

Red Spider on Almonds.

I have 30 acres of almonds 13 years old not doing well and making little growth the last three years. The leaves turn yellow and fall during the summer. Have been badly infested with red spider for years. For this I have done nothing as I find it hard to sulphur big trees and a neighbor who does sulphur has trees but little better than mine. I think trees should be sprayed but wish fuller information. Where can I secure a spraying machine and what will it cost?—Subscriber, Esparto.

In spite of the neighbor's experience we believe this inquirer should proceed against the red spider with the sulphur treatment. The big power dust machines will send sulphur and lime mixed to the tops of the tallest trees and do it very rapidly. With as big an investment as 30 acres of 13-year old almond trees, this slight additional expenditure should certainly be incurred in the effort to secure best results. The small handpower machines which we fear would not be satisfactory for this use may be had for $15 and up. A power machine which will send the spray to the tallest fruit trees may be had for not less than $100. An engine to run it would probably cost $150, although a cheaper engine of 2½ h.p. would answer.

As to spraying during the present season while the trees are practically dormant, with a liquid spray, we could not tell without seeing the trees, but would judge that a thorough application of the sulphur-lime wash would be wise. This wash may be purchased of Cultivator advertisers or it may be mixed according to formula appearing in our issue of November 3rd. The machine for spraying is more expensive. A power machine, including truck on which it is hauled, will cost about $300 to $350, though we believe some cheaper ones are on the market, and a large size hand pump will answer for this work.

Nitrate of Soda Blood Meal.

Which is to be preferred, nitrate of soda or dried blood, the price of nitrate being equal, for application to late cauliflower for pickling, planting to be June 1st, matured crop to be gathered about September 20th?—W. L. J., Birch Creek, Utah.

Answer to this question depends upon various factors. In California citrus groves where instant action is wanted and in cool weather when the nitrifying bacteria in the soil are less active, the nitrate of soda gives this instant action. It must be borne in mind that while the dried blood contains nitrogen, it requires certain chemical changes in the soil before its plant food is available for the rootlets. On the other hand, it carries into the soil a quantity of humus which nitrate of soda does not. We note our inquirer does not intend to plant until June, so we take it the ground will be warm and active and in proper condition to make available the dried blood. This would rather incline us to prefer the blood. Also, regarding the use of nitrate of soda alone the alarm has been sounded that its use in quantity may result in the carrying into the soil of a sufficient amount of soda to make its alkaline action injurious to more delicate plants. This, however, will depend upon the nature of your soil, drainage and other factors.

Redwood Shavings.

Recently your paper contained an interesting account of the result of putting redwood shavings on the soil of a citrus orchard. But the article failed to tell us the reason for the harmful effect upon the trees.

The resin in redwood and which gives the wood its color is poisonous to plants and seeds. In testing the germinating power of seeds by using a block of wood to hold seeds between blotters above the water in which the block floats the precaution must be observed never to use a block of redwood. If redwood is used the resin discolors the water and always kills the seeds which are being tested.

Evidently this resin has the same effect upon the tender root hairs of the citrus tree. F. H. B.

HANDS UP.

Eleanor, aged six, had been going to school only a few weeks. She had learned to raise her hand if she wanted anything. One day she put this into effect when she was sent to the chicken house to get the eggs.

Just as she reached the chicken house door her mother heard her say: "All you chickens that have laid an egg, raise your hands."

Bees and Their Care

RECLAIMING THE SWARMS.

We have been shinning up trees to get swarms. You may wonder why we did not pursue the good old orthodox plan of having the queens' wings clipped, or why the colonies had not been shaken, to stop all of this unnecessary climbing and chasing. In the first place, some of our customers object to having their nice queens clipped—don't like the looks of them. In the second place, the swarming weather caught us by surprise. We had about given up having any honey-flow, and the problem had been to keep our bees from starving. But the season opened up and the bees swarmed, and how should we get them out of our tall basswoods? No way under the sun but to climb after them. We used a jack-knife to cut off the limb on which the swarm hung, then by carefully dodging among the limbs we climbed down to the ground as best we could, handing the swarm to an attendant as soon as he could be reached. But the jack-knife in cutting jarred the limb.

I finally took down a big pair of pruning shears, two big potato sacks, and some stout string, supplying the boy who did the "shinning" with all these before he went up the tree. The shears were handy for clearing out a space through which to let the bees down. After reaching the swarm, the boy would proceed to slide the bag up around the bees. Then he would grab the neck of it around the limb, and with the pruning shears slip it off. He would then with his rope let down bees, limb, bag and all, or he could climb down without danger of jarring the bees off or without any fear of being stung. In descending through the tree, holding a limb from which a big swarm is hanging, one is liable to bump it against the foliage, dislodging many of the bees, filling the air full of them. These will in all probability alight on the limb nearest where they were first clustered, with the result that another climbing is necessary to get all the bees. The coffee sack or bag saves all this trouble. The pruning shears are a vast improvement over the jack-knife. When the bees swarmed we had to hack away with this ever-present and usually convenient tool, but which, on occasions of this kind, was anything but convenient or suitable.

I have been wondering if it would not be a good thing for those who do not clip the wings of their queens to have a special belt gotten up in which could be fastened a small short saw, a pair of strong pruning shears, a smoker, a rope and perhaps some other tool that might be necessary to complete the equipment.

The majority of beekeepers believe, and believe rightly, that the only way to handle swarms is to do so by the clipped-wing plan. But something will happen, on account of which they will not get at the job, or perchance some queens will be skipped. In either case a swarm or two is liable to get to the top of a tree, and nothing but climbing after it will bring it to earth again. I have seen the day many and many a time when an outfit of tools, with a pair of climbers already hitched to a belt, and ready to strap on, would be worth a good deal. There is nothing like being prepared for an emergency; and when one is in a hurry, the more convenient and handy his tools are, the more effective will be the work.—Bee Gleanings.

HONEY IN HISTORY.

Literature is filled with honey-makers and their incomparable gift. On the height of Olympus it was called ambrosia, and was welcomed as food fit for the immortal gods. Again, they called it nectar, and offered it to the nymphs who sported amid the green fields of Thessaly. No other living creature has been more celebrated than the little brown bee.

The Vedic poets sang of honey and the honeymakers, and all the generations of India have placed them in their mythologies, their religions and their loves. The great god of gods, Vishnu himself, is often represented as a bee lying in the heart of a lotus flower.

The sun and moon are symbolized by the bee; as the dispenser of honey it was the moon, as the receiver of honey, by the sun. When the lotus flower, the symbol of nature, opens then Vishnu, the sun god, goes forth as a bee, and thus the bee becomes the symbol of birth upon earth, thus honey was used at bridals and birth rejoicings.

The murmur of the bee is a constant accompaniment to Hindoo song and love-making, and the music of the bee at times vies with the song of bird, or even celestial music. From the most ancient times the honeymaker has played a constant and pleasing part in the poetry of the Orient.

Today the wild bee is found everywhere in India; today the wild honey is prized just as it was centuries ago. The philosophers of Greece esteemed the bee, and without honey and the honeymaker the poets of Hellas would have lacked expressions of sweetness that have delighted all succeeding ages.

But it is remarkable that Greek literature treats more of the honey than of the bee. The honey of Hymettus has been celebrated for centuries. It is the classic honey of antiquity, and shares the honor with that of Hybla and Mount Ida.

"On many breakfast tables there is a pot of honey," says Gissing. "Not the manufactured stuff sold in shops under that name, but honey of the hive, brought to me by a neighboring cottager whose bees hum in my garden. It gives, I confess, more pleasure to my eye than to my palate, but I like it because it is honey.

"But think how one's view of common things is affected by literary associations? What were honey to me if I knew nothing of Hymettus and Hybla? If my mind had no stores of poetry, no memories of romance? Thus all the common things of life are lifted up by the touch of genius and made precious by poet's rhyme.'

The sweetness of honey came to be symbolical of sweetness of speech. So Hesiod tells how, when the muses would honor a son of man,

Upon his tongue they shed a balmy dew,
And words, as honey sweet, drop from his lips.

Cicero relates this story: "When Plato was an infant, a swarm of bees settled on his lips during slumber, and thus announced the sweetness of that persuasive eloquence for which he was one day famous." Xenophon, who was a writer as well as a soldier was called "The Attic Bee."

Pindar was visited by bees as he lay sleeping, and the divine Homer received his first nourishment from a priestess whose breasts distilled pure honey. In fact, nearly all the sweet singers or eloquent speakers of ancient days were in some way aided by the magic bees.—Exchange.

SUPPOSED INJURY OF CROPS BY BEES.

Bee keepers are often compelled to combat the idea that bees cause damage to fruit or other crops by sucking the nectar from the flower. This is not only untrue, but in many cases the bees are a great benefit in pollinating the flowers, making a good crop possible. A more frequent complaint is that bees puncture fruit and suck the juices. Bees never puncture sound fruit, but if the skin is broken by some other means bees will often suck the fruit dry. In doing it, however, they are sucking fruit which is already damaged. These and similar charges against the honeybee are prompted by a lack of information concerning their activities. Bees may, of course, become a nuisance to others through their stinging propensities, but bee keepers should not be criticised for things which their bees do not do.

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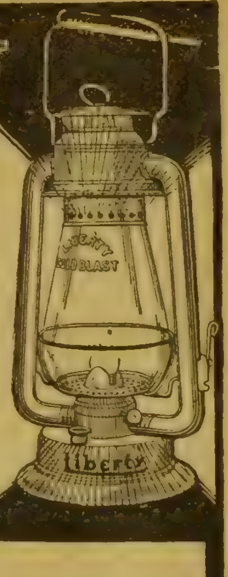

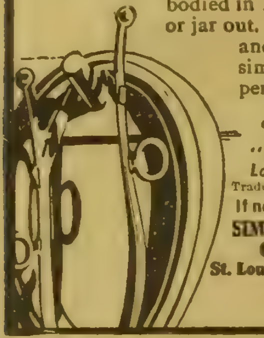

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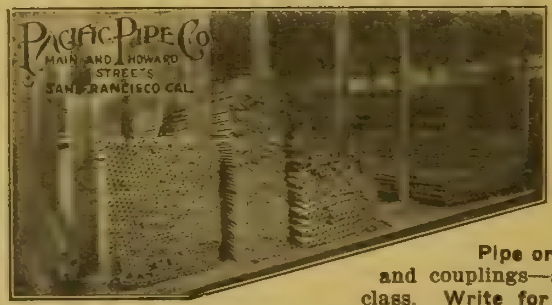

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General Agriculture

DEMONSTRATION FARMS.

James J. Hill is an example of a man in whose making the item of foolishness was wholly omitted.

"Jim" Hill, as they call him in the Northwest, wouldn't know a joke if he met it on a foot-bridge at noonday.

Moreover, Jim Hill is the greatest developer of railroad tonnage that the world has yet produced.

In a magazine article, last winter, Jim Hill said that if he had his way about it the country would build one less battleship and use the money to establish a thousand demonstration farms.

What made Jim Hill say that? Business, simply business. Battleships do not produce freight for the Hill roads. Farms do. Simple, isn't it?

But no matter what Jim Hill's motive may have been, the outstanding fact is that Jim Hill is in favor of demonstration farms. When a man, whose mind deals with business propositions as accurately and as relentlessly as an adding machine deals with a column of figures, goes out of his way to say that he believes in demonstration farms by the thousand, it is time for the plain people who never thought of such a thing and don't know what Jim Hill is talking about, to sit up and observe.

And the chances are that ninety-nine men out of ninety-nine will jump to the conclusion that he was talking about experiment farms.

Now there is just one hundred per cent of error in that conclusion.

A demonstration farm is an experiment farm—with the experiment left out.

Quite a difference, but a vital one.

Battleships come higher and higher all the time, and, it will not be long until a first-class article will cost ten million dollars.

Let us see, a million is a thousand thousands. Ten million would be ten thousand thousands. Split up into a thousand demonstration farms, that would mean ten thousand dollars for each. Right, isn't it? And, by the way, that is exactly what the territorial legislature of New Mexico appropriated two years ago for a demonstration farm—the first of its kind in the world.

If Jim Hill had his way, the New Mexico demonstration farm would be one of a thousand, instead of the only one.

* * *

In a petition addressed to the legislature of New Mexico by the Obar Farmers' Institute, urging the matter of demonstration farms, the following reasons are submitted:

First: "Seeing is believing." If a farmer can go to a farm in his own locality and see good crops grown under the same conditions of soil and climate as his own, it will have more effect than tons of talk.

Second: Such farms would become valuable sources of supply.

Third: At slight cost the methods used, etc., could be published in bulletins or the local press.

Fourth: As the experimental feature would be eliminated and no crop grown except with a view to profit, a demonstration farm woudl be largely self-supporting.

Fifth: The demonstration farm would in no way interfere with the agricultural college or the experiment station, but would supplement both in a distinct field of its own. In fact, it is the natural and logical supplement of the experiment station, since it affords the vehicle for the dissemination of ascertained knowledge.

The function of the experiment station is to "prove all things," while that of the demonstration farm is to "hold fast to that which is good."

It will be seen that Jim Hill's business instinct enables him to put his finger on the sore spot of agriculture as located by those Obar farmers.

It goes without saying, that what makes tonnage for a railroad also makes money for the farmer, and that up to the present the interest of the farmer and the railroad are identical, and it is fortunate for the farmers that in this new departure in the teaching of agriculture, they have so powerful an ally as the foremost practical railroader in the world.

New Mexico, having no sea coast, is ready to strike hands with Jim Hill on the battleship proposition, and would be glad to see him have his way about demonstration farms.

Unlike most educational propositions, the demonstration-farm proposition is founded on the essential principle of pecuniary profit. In order to be a good demonstration, it must make money. If it is found that it can be made to pay its way while filling its mission, when there is no limit to the number of those farms that can be maintained and viewed in this light, the new departure inaugurated by the territory of New Mexico may point the way to realizing the dream of James J. Hill of a thousand demonstration farms—even though we build no less battleships.—Farm and Fireside.

SUN RUINS GRINDSTONES.

Sun is a fine thing for hogs and chickens, but it isn't good for grindstones. Its rays harden the part of the stone on which they shine, and thus makes the stone wear unevenly. If the grindstone is not under a shed, or if the sun strikes it, make a box cap for it—twenty minutes' work.

Few things are more satisfactory than a good-cutting, even-faced grindstone. Used freely, it is a great labor-saver, for dull tools make work hard. If the stone gets grooved, hold the hoes or the spade upon it. This will soon bring the face level again —and it won't hurt the hoes or the spade a bit to give them keen edges. —Guy E. Mitchell.

FARMERS' AUTOMOBILES.

Much has been said in the papers about the farmers wasting their money in riotous automobile buying and of how they have threatened the financial stability of the country by mortgaging their farms to purchase the frivolous joy wagon. This condition may apply in some sections but not in Kansas. In the first place the automobile is not a pleasure vehicle on the farm but a very valuable farm implement. Of all classes of business men the farmers have more use for the automobile than any other except it be the physicians. In the second place the farmers of Kansas are not mortgaging their farms to buy automobiles. They do not need to. But even if they did, what would it amount to in the way of injury to their personal credit or a threat to the finances of the country. The kind of cars most frequently bought by farmers cost about $1500 on the average. The average value of the quarter section farm is, at a low estimate, $10,000. Now suppose a farmer should place a $1500 mortgage on his $10,000 farm, would the financial universe drop any stars? One load of hogs would pay it off.

Of the 12,000 automobiles now owned in Kansas perhaps 7000 are owned by farmers and these have increased the prosperity and comfort of the farmers or supplied the means for it. The automobile on the Kansas farm is not a luxury in any sense but a most valuable farm tool.—Farmer's Tribune.

WHITEWASHES.

Whitewash recipes seem always in demand, and when seen they should be cut out and put away. Here are two which have been frequently printed, but this time we find them in an exchange in a little more detail.

Take half a bushel of unslaked lime, slake it with boiling water, cover during the process to keep in steam, strain the liquid through a fine sieve or strainer, and add to it a peck of salt previously dissolved in warm water, three pounds of ground rice boiled to a thin paste and stirred in while hot, half a pound of powdered glue previously dissolved by soaking in cold water and then hanging over a slow fire in a small pot hung within a larger one filled with water. Add five gallons hot water to the mixture, stir well, and let it stand a few days, covered from dirt. It should be applied hot, for which purpose it can be kept in a kettle or a portable furnace. Coloring matter may be added as desired. For cream color, add yellow ochre; pearl or lead, add lamp or ivory black; fawn, add proportionately four pounds of umber to one pound Indian red and pound common lamp black; common stone color, add proportionately four pounds raw umber to two pounds lamp black.

For interior work: Slake a peck of lime till it is thick and creamy. While it is hot, mix with a pint of linseed oil and one-quarter pound of glue previously dissolved in water. Let the mixture stand several hours before applying it. A little lamp black dissolved in vinegar and mixed with whitewash gives a grayish tint, which may be preferable to pure white; a little umber gives a fawn color, and yellow a cream tint. Very little coloring matter should be used, or the shade will be too dark. If this is made somewhat thinner than indicated above and strained through a flannel cloth, it may rapidly be applied with a sprayer such as is used in spraying trees. When strained through cotton cloth the lint from the cotton often interferes with the work.

SPRAYING TO KILL WEEDS.

The Ohio Experiment Station is devoting considerable attention to the subject of weed spraying with a view to eradication. The use of chemicals as sprays to destroy weeds has heretofore been better developed in the West, with its more limited labor supply and its restricted cropping systems. There is little doubt but that weed-destroying sprays will find useful application elsewhere.

What must be the line of operation or attack in the use of weed-spraying chemicals? asks A. D. Selby, botanist of the Ohio station, in a recent bulletin. These chemicals, he says, must destroy the weeds without injury to the crop grown.

Most of our weeds are broad-leaved, or, as we all know, plants with two seed-leaves. Our cereals and grasses are narrow-leaved plants which produce a single seed-leaf. Upon the different reactions of these two classes of plants to the chemical sprays we must depend for our result—for injury to the weeds without harm to the crop. We find that nearly all crops and weeds of the broad-leaved class of plants will be injured by these chemical sprays, and all weeds of the narrow-leaved class will escape injury by the sprays. It follows that crops of the clovers, alfalfa, soy beans, vetches and rape will be killed by such chemicals as destroy broad-leaved weeds, and that the sedges, quack grass, crab grass and wild onion or garlic will not be killed by spraying with such solutions as are not injurious to the grasses, cereal grains, etc. We may hope to destroy such weeds as mustards, dandelions, ox-eye daisy, white-top and horse-nettle, as well as practically all other broad-leaved weeds, by use of these sprays. At the same time, these sprays will leave blue grass, timothy, red-top and other grasses, including the growing cereal grains, such as wheat, oats, rye, etc., without injury if properly adapted in strength and time of application.

Briefly summarized, however, continued Mr. Selby, weed sprays, when properly adapted, should be available for the destruction of the larger portion of our pasture and grain field infesting weeds, when the methods are rightly and economically developed. It would certainly be a travesty on our methods of culture to expect to substitute weed sprays for culture in the growing crop, such as in corn fields and the like.—Wisconsin Agriculturist.

When your train uv thought comes to a stan'still, git out an' take a walk; probberly thet is what the train needs.

TO REPAIR THE CARRIAGE TOP.

Enameled leather will last a long time provided it is kept clean. It should be washed occasionally with castile or an oil soap and warm water. After the enamel has broken and scaled off the following is recommended:: Clean the leather thoroughly with castile soap and warm water. Dry with a soft, woolen cloth, and then apply a dressing made by melting 2 ounces of beef suet in a short pint of neatsfoot oil, to which is added a coloring of drop black and a piece of beeswax as large as a thimble. Melt the beeswax and add the oil and suet to it, stirring thoroughly. Apply with a cotton cloth that is saturated with it and finish smoothly. Keep some on hand for an application to the carriage top about once in every four or five months.—Agricultural Epitomist.

Idaho is making preparations for the sale of 24,000 acres of timber land in Nez Perce and Idaho counties.

Every Farmer and Thresherman Should Investigate These Two Farm Power Machines

The Avery Farm Tractor For Light Work
The Avery Double Undermounted Traction Engine For Heavy Work

Road Work Field Work Belt Work

These pictures show some of the kinds of work the Avery Gasoline Tractor will do.

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Since the day when mechanical power was first used on a farm there has been no greater invention that means more to farmers than the Avery Farm Tractor shown above.

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Many have already been sold and are in successful use. Severe tests have proven that they are able to stand up under hard service and that they are reliable.

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It will do the work of two to four teams in hauling. Will carry 3 ton load on its own body and pull other loaded wagons behind. Has slower speeds for heavy hauling and faster speed for quick trips with lighter loads—from 3 to 15 miles per hour.

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Will pull 3 fourteen inch plows, harrows, packers, clod crushers, binders, and other machines in the field.

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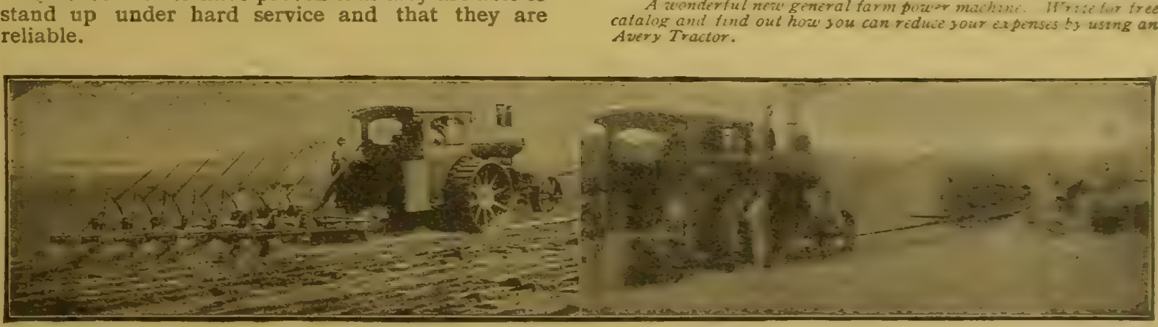
This same machine will operate a feed grinder, pump, baler, saw, small thresher and other belt-power machines.

A wonderful new general farm power machine. Write for free catalog and find out how you can reduce your expenses by using an Avery Tractor.



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Plowing and Threshing with an Avery Double Undermounted Traction Engine.

If you need *more power* for plowing, threshing, road grading, etc., here is the engine that *Pulls Harder, Lasts Longer* and is *Easier to Handle* than any other. The Avery Double Undermounted Traction Engine. (Patented.)

The *only* Traction Engine that is *Undermounted.* The right construction of an engine for all around traction and belt work. The most successful plowing and threshing engine built today.

Find out all about either one or both of these machines. Write for free catalogs with illustrations of machines in operation. Don't think of buying until you investigate them. Address

AVERY COMPANY, 921 Iowa Street, Peoria, Ill.

Also Makers of Grain Separators and Corn Growing Machinery—Send for Catalogs.

Southern California, Nevada and Arizona Agents for Avery Farm Tractor Described Above.

BAILIE & BRANDT CO. (Inc.)

943-945 NORTH MAIN ST. LOS ANGELES

Money Making Little Liners

In this department we will insert your advertisement under a classified head for 1½ cents per word per issue. No ad accepted for less than 25 cents. Our classified columns are the clearing house for our many thousand readers.

LIVE STOCK.

For Sale—Mule Foot Hogs. The hogs that do not take cholera. Am obliged to part with a very choice small herd of Mule Foot (solid hoof) hogs. Just the thing for one who wants to start breeding these hogs for breeders. To mature boars, two sows, thirteen pigs—eight sows, five boars. Bluest blood of the breed, each individually excellent, all registered or eligible to registry in the National Mule Foot Association. Remember, a pure bred Mule Foot has never been known to take cholera. T. Palmer, Chula Vista, San Diego Co. (Railroad Station, Otay, Cal.)

For Sale—Registered Holstein Bulls; 1 to 2 years old. Some sired by Prince Juliana, brother of former world's record heifer, Juliana De Kol. Dam and granddam, A. R. O. cows. Three record-breakers in some of their pedigrees. M. E. Sherman, Minnewawa Vineyard, Fresno, Calif.

Fistula, Poll Evil, Quittor and all running sores cured permanently by a recent discovery of medical science. Write for particulars. Dr. Fred G. Matthews, Veterinary Bacteriologist, 1232 Central Ave., Los Angeles.

Angora Cat—Splendid blue tom by Blue Boy out of imported Fluffy, $50.00. B. A. Stocker, San Luis Obispo, Cal.

Registered Shorthorn Bulls and **Poland China Hogs** for sale. Best breeding. P. H. Murphy, Perkins, Cal.

WANTED.

Wanted—Your work pays the expense to learn a trade that pays $5 a day, in a few months' time; electricity, automobiles, plumbing, bricklaying; actual contract jobs; 200 students last year. United Trade School Contracting Company, 647 Pacific Electric Bldg., Los Angeles, Cal.

A Young, honest, industrious American, thorough High School education, willing worker, trusted anywhere, wants position on some large cattle or dairy ranch. Best of references. Address Box P, Cultivator.

Farms Wanted—Don't pay commissions. We find you direct buyer. Write, describing property, naming lowest price. We help buyers locate desirable properties free. American Investment Association, 12 Palace, Minneapolis, Minn.

Help Wanted—We want several good solicitors to solicit for a high class suburban monthly publication. Good profitable employment to the right party. For particulars address Box H, Cultivator Office, Los Angeles.

Wanted—Good farm from owner only. Want possession now or next spring. State particulars. Holsten, Box 754, Chicago, Ill.

Wanted—From one to three thousand acres of land. Wm. Paramore, Hollywood, Cal.

TREES.

For Sale—One year apple trees, peach, pear and apple trees in dormant bud. One year seedling California black walnut. Three to four thousand palms in pots, ranging from 4-inch up to 12-inch pots. 350 pepper trees in 8-inch pots. Miscellaneous lot shrubs, trees, Cork oaks, etc. Several thousand pots from 2-inch to 12-inch, some never have been used. One surrey and set single harness, one Concord buggy, several sets second hand work harness, 3 roll-top desks, several office chairs, spreaders and chains, one 32-horse harvester, and several tons of baled hay. Must be sold quickly and at prices that will move them. Special low prices on palms. Also 4 well built tent houses. Address Q. A. Lobingier, Magnolia Ave., Arlington Sta., Riverside, Cal.

For Sale—About 3000 Washington Navels and 7000 Eureka and Lisbon Lemons, one year old, thrifty stock and free from scale. Nursery near Mentone. Address 428 Court St., San Bernardino, Cal.

Bonvalliets Giant, new Chicako variety, 2 years, $5.00 per 1,000; Palmetto, $4.00 per 1,000. Plant early. Deciduous fruit trees in dormant bud, $5.00 per 100; will pack light. D. Turner, Phoenix, Arizona.

For Sale—250,000 first-class rooted vines, Zinfandel, Tokays, Muscats, Black Morocco, Black Ferrara, Cornichons, and Emperors in 1,000 lots at $11.00, smaller lots $1.50 per 100. Geo. McArthur, Acampo, Cal.

Ornamental Eucalyptus—Cleanest and best shade trees for the ranch. Acacias, pines, etc. Large stock. Ballou's Nursery, 728 East Orange Grove Ave., Pasadena, Cal.

Write for Special Price on peach trees and French prune trees, on Myrobolan root. Gridley Colony Nursery, Gridley, Cal.

Marsh Seedless Grapefruit—600 large trees for sale. E. S. Thacher, Nordhoff, Cal.

Black Walnut Selected Trees—One and two years old, 2 to 8 feet high. Also seedling peach trees, good stock, and Maliner Keen Horseradish sets. A. P. Henning, Clements, San Joaquin Co., Cal.

For Sale—French and Italian Prune trees. Four to six feet high, $10.00 per hundred. Bargain. Write J. M. Beaman, 17 Kennan St., Santa Cruz, Cal.

Eucalyptus Rostrata (Red Gum) in cans—3 to 5 feet, $1.00 dozen, $7.50 hundred, $60 thousand. Wippert Nurseries, Hemet, Cal.

For First-Class Valencia and Navel Orange trees and Eureka lemons, see A. G. Snow, Oxnard, Cal.

Fine Line of Navels—Valencias and Eureka lemons for delivery spring of 1911. Contract now and get the first choice. The King Citrus Nurseries, Whittier, Cal.

RARE PLANTS.

Wild Plant Improvement Gardens, Santa Ana, California. Newton B. Pierce, proprietor. Rare choice ornamentals and new fruits from all lands.

Ahuacates, Alligator Pears (Persea Gratissima). Fresh Mexican seeds, none better for stock; $4.50 per 100 seeds; $40.00 per 1000 seeds. Montarioso Nursery, Box 1500, Santa Barbara, Cal.

LAND FOR RENT

For Rent—4-acre ranch one mile west of Sunny Slope Station on Monrovia Electric line in San Gabriel Valley. Plenty of water. All necessary equipment for raising chickens. 4-room California house. Also will sell cheap 300 thoroughbred Barred Rock hens and roosters, Hadley strain. Inquire at ranch or of owner, T. W. Kanouse, 200 N. Los Angeles St., Los Angeles.

FARM LANDS FOR SALE.

Fruit Ranch—10 acres, Morgan Hill, California. 10 acres rich, level land, with new 6-room bungalow, with bath, lavatory and toilet; hot and cold water; 2 porches in front, large screened porch in back, cement cellar 9x24; all rooms large and sunny. House fitted for gas, with acetylene gas plant in tankhouse; kitchen range run by distillate, with tank, etc. Cement walks and gravel drive.

Fine tankhouse and 3000-gallon tank, well and windmill; good barn, with space for chickens, pigeons, etc.

All the 10 acres in fruit, viz.; 400 French prunes, 300 peaches, 1000 grapevines, 125 apples, 25 pears; choice variety of fruits and nuts for home use; oranges, lemons, quinces, plums, figs; plenty of berries and small fruits.

An ideal home place, in a thriving Santa Clara valley town, only ½ mile from postoffice and railway station. Fine old oak trees for shade and place is now on a paying basis and in first-class condition. It is a bargain at $6000; $1500 cash, balance to suit purchaser. Chas. F. O'Brien Company, 112 West Sixth, Los Angeles. F3777, Main 3604.

For Sale—A 20-acre farm for $20 cash and $20 a month; possession now; $90 to $125 per acre; your crops pay for the land. Rich, level land for alfalfa, oranges, almonds, grapes, cows, chickens; abundance of ditch water, for irrigation, for $1 an acre a year. Where else can you get this? In Oakdale Colony, near good town and railroad station, climate delightful. T. Wiesendanger, 207 S. Broadway, Los Angeles, Cal.

For Sale—155½-acre ranch in Owens Valley. 120 acres in cultivation, balance good pasture. 12 acres in 2-year-old Winesap apples. Work stock, farm implements, milk cows and 100 head hogs. Ranch 2½ miles from county seat. Mountain water, continuous flow, no assessments. A good opening for dairy or creamery. Address owner, Box 52, Independence, Inyo County, Cal.

For Sale—815 acres in San Luis Obispo County. A typical dairy ranch. Plenty of wood, water, irrigable land, buildings, fenced and cross fenced. Orchards, vineyards, oranges, lemons and walnuts do exceedingly well here. Forty acres of land suitable for these. Price $21 per acre. For further particulars apply to Mrs. F. A. Clink, Pozo, Cal.

For Sale—The Fresno Meadows Colony is now opened for settlement in lots of 40 acres or more with water at $50 per acre. This is an opening price and is made to induce settlement. Arrangements can be made so that the first payment will carry the deal indefinitely. Call or write at once. Green & Webb, Gen. Sales Agents, 406 Laughlin Bldg., Los Angeles. Phone A8284.

Tulare County—652 acres at $42.00 per acre. Good terms. One-third mile from switch and flag station, main line S. P., 2 miles from town and school. Over 600 acres of this, the very best, level alfalfa land. Unlimited pumping water at shallow depth, besides artesian water deeper. Electric power line near. Fine for subdivision. C. H. Biggin, Pixley, Cal.

For Sale—Two acres fine land with water free, between Los Angeles and Long Beach. Close to new boulevard Pasadena to Long Beach, work on Pasadena end begun. One mile from Somerset Station. Price $400 an acre. $200 down and $20 month. W. Kellaway, 224 New High St., Los Angeles. Phone Broadway 2503.

For Sale—Ranches and Country Homes Specialized. Exchange and market for this class of property. Full, accurate and reliable particulars of beautiful and profitable homes with acres. Buy, sell or exchange through

Parrish Barker.
"Square Deal or No Deal."
A3272. 207 Union Trust Bldg., Los Angeles.

60 Acres in Santa Clara County. A splendid dairy ranch. Good barns, dwelling and water supply. ¾ of it in excellent stand of alfalfa; close to railroad; one hour's run from San Francisco. Address 281 North Third St., San Jose, Cal.

Irrigated Land—The famous Gridley Colonies. Improved lands, best homeseekers' proposition in California. Write for particulars. Gridley Land Co., Gridley, Cal.

For Sale—El Cajon Grant Land. Virgin soil, 4 miles to railroad, good farm land at $30 to $60 per acre. S. B. Hawley, 1548 D St., San Diego, Cal.

Cuba—Most productive soil. Delightful and healthful climate. Ample rainfall. Cheapest transportation facilities to the world's greatest markets. Particulars free. Sanderson, 13 Palace Building, Minneapolis.

Apple Orchards—Large and small, in the only apple producing section in California. The greatest section west of Missouri River. Write for booklet. Geo. W. Sill & Co., Watsonville, Cal.

MACHINERY.

For Sale—A good portable drilling rig, good for 800 ft., complete string of tools. About half its value, at $750.00. Address M. H. Magie, 1242 Harvard Blvd., Los Angeles, Cal.

TURKEYS.

For Sale—Thoroughbred Mammoth Bronze turkey toms, spring hatch. Only a few left, all fine, large, well marked birds. Have two female Scotch Collie pups left, pedigreed stock. Mrs. A. C. Wisegarver, San Fernando, Cal.

Thoroughbred Mammoth Bronze Turkey Toms, April hatch, of large size and fine markings. $8.00 each. Mrs. Nellie Hart, Holtville, Cal.

Bronze Turkeys for sale. Good stock at $3 to $4 each. L. Haynes, Madera, Cal.

FOR THE HOME.

Raisins—Recleaned, ready for use, Thompson Seedless Raisins, absolutely free from all stems and dirt. Cleaned by machinery. Housewives' delight. Better than candy for the children. Nature's own health food. Drop us postal for sample, or send $3.00 for 50-pound box. Fowler Fruit Co., Fowler, Cal.

Raisins—Producer to consumer, new crop loose Muscatels in 50-lb. boxes, 2 crown, 4c; 3 crown, 4½c; 4 crown, 5c; guaranteed. A. H. Dugdale, Etiwanda, Cal.

POULTRY.

How to Make Money—Mrs. A. Basley's New Poultry Book is just out. It is without exception the most wonderfully complete manual on the subject of successful poultry management ever written. The secret of how to raise every turkey hatched and the "Basley Formulas," now published for the first time, are worth many times the price of the book. The "Western Poultry Book" is a practical book by a practical woman. Price $1.00. Address Mrs. A. Basley, Box 77, Venice, Cal.

Hayes, R. B., Poultry Fancier and Rhode Island Red Specialist—30 breeding pens of Reds, 20 pens miscellaneous varieties. See our birds, they tell their own story, or write for circular. Eggs for sale only. Yards in Arroyo, opposite Ostrich Farm. Box 35, Garvanza Sta., Los Angeles, Cal. Phone East 1631.

LOVELL'S BLACK MINORCAS
California's
Greatest Egg Producers
Pedigreed, trapnested, scientifically bred Free circular. DAVID J. LOVELL, 5720 So Park Ave., Los Angeles, Cal.

Day-old Chicks from my pure bred and carefully selected stock of S. C. White Leghorns from January 15 to February 15, $10 per 100; after February 15th, $9 per 100. Spring orders taken now. J. R. Heinrich Poultry Yards, Arroyo Grande, Cal., San Luis Obispo County.

Magnolia Poultry Farm—S. C. White Leghorns (Wyckhoff stock). Vigorous, healthy birds, good layers, large, white eggs. Eggs, $2.00 per 15; $3.00 per 30; $7.50 per 100; $60.00 per 1,000. C. H. Hosford, 351 Magnolia ave., Riverside, Cal.

Schellville Hatchery—Thoroughbred Leghorns, Black Minorcas, R. I. Reds and Barred Plymouth Rock chicks hatched from heavy layers. Strong chicks and safe delivery guaranteed. Sonoma, Cal.

White Orpingtons—Finest utility stock on coast. Heavy layers. Eggs $5.00 per setting of 15; $25 per 100; baby chicks, 50c each. H. E. Dickinson, R. F. D. 1, Napa, Cal.

Barred Rocks a Specialty—Eggs for hatching from the well-known Hawkins Strain of Barred Plymouth Rocks, best matings $2.50 per 15. Utility stock, $1.50 per 15. Enoch Crews, Fairmount Ave., Santa Cruz., Cal.

For Sale—Baby chicks. White Rocks, Barred Rocks and Rhode Island Reds. Am now booking orders. J. W. Lyon, Gardena, Cal.

Booking orders for day-old chicks at 12c for January delivery and later. White Leghorn eggs at $2.50 per setting, $6.00 per 100. Sussex Poultry Manor, Los Gatos, Cal.

BONNELL'S S. C. BLACK MINORCAS
WIN EVERY TIME
Eggs for hatching after Jan. 15th. C. C. Bonnell, State Vice-President American Black Minorca Club, 2919 Brighton Ave., Los Angeles.

I Hatch White Rocks Exclusively—Chicks $15 per 100 from a heavy laying strain of prize winners. I am booking orders now for later delivery. Can supply stock from 1 to 10 weeks old. Write for prices. J. Wesley Lord, Inglewood, Cal.

We are now booking orders for day-old chicks, White and Buff Orpingtons and R. I. Reds from thoroughbred stock. Very best winter layers. Vallejo Poultry Yards, 208 Frisbie St., Vallejo, Cal.

For Sale—A few Black Minorca pullets, some of them laying. They are extra choice, being bred from my special pen. Also cockerels. R. G. Page, 1227 W. 10th St., Los Angeles, Cal. Phone Broadway 5594.

Buff Leghorns—The coming bird for California, one choice cockerel left, 10 months old. Limited number of eggs for sale. C. A. Carrie, R. D. 1, Burbank, Cal..

R. I. Red Eggs for hatching from scientifically tested layers. The Luedkes, Anaheim, R. D. 1.

Blue Andalusians—Get new blood by buying a setting of eggs or a cockerel. Our matings are new this year. Mrs. T. R. Griffith, 3957 Halldale Ave., Los Angeles. Phone West 541

Petaluma Hatchery—Capacity 50,000 eggs. We are booking orders for spring. Write for circular. L. W. Clark, 615 Main St., Petaluma, Cal.

For Sale—White and Buff Wyandottes from best strains. W. C. Parker, 113 Pacific Ave., Santa Cruz, Cal.

Lodi Hatchery—Just hatched, White Leghorn chicks from healthy, heavy laying stock. Booking orders for later delivery. T. C. Hawley, 504 E. Elm St., Lodi, Cal.

Single Comb Brown Leghorn Eggs—$5.00 per hundred, $1.50 single setting. Mrs E. Foran, Box 445, Visalia, Cal.

Poultry Wanted—We pay the highest market price for all the local poultry we can get, no matter how large the quantity; also fresh ranch eggs. We remit immediately Allaway & Layton Co., 607 E. 3d St., Los Angeles, Cal.

Pacific Hatchery—Baby chicks, incubator eggs, and selected thoroughbred poultry, ranch raised. W. W. Clough, Ontario, Cal.

Orland Hatchery—Just hatched White Leghorn Chix. Booking orders for later delivery. P. L. Simpson, Box 13, Orland, Cal.

Baby Chicks and Eggs for Hatching—Orders now taken for January and later delivery of R. I. Reds (Tompkins Strain), White Minorcas and S. C. Black Minorcas (Northrup Strain). C. U. Chamberlin, Los Gatos, Cal.

INCUBATORS.

For Sale—Three 240-egg size, two 120-egg size. Machines all in good order. For particulars and price address X-Ray Ranch, Santa Rosa, Cal.

HORTICULTURAL PRINTING.

The Kruckeberg Press, 123 South Los Angeles St., Los Angeles, Cal., makes a specialty of Horticultural Printing and Engraving. Cuts and illustrations of all standard, economic and ornamental plants on hand and subject to the use of patrons without cost. Samples and estimates cheerfully furnished. Remember, we design, write, engrave, bind and print; in brief, do the "whole thing," at no additional expense to the customer. Correspondence a pleasure.

ENGINES.

For Sale—Second-hand windmills, tanks, engine, farm machinery that will do same work as new at half price. 8 ft. steel aermotor, tower, 3000 gal. Redwood tank, 10 ft. stand, galvanized pipe, pump and rods complete, $69 on cars; another with smaller tank, $48. 10 ft. steel aermotor, steel tower, 5000 gal. tank, fine 16 ft. stand, galvanized pipe, pump complete $135 on cars, cost $325 new and only used one year. Tanks, all sizes and kinds. Finest and largest stock of second-hand tanks we have ever had. Special sale; two 8000-gallon, practically new, with rod, hoops, at $55, cost new $92.40. Round stock tanks 2x8 ft. wide, $10.

Look!

3½ H. P. Fairbanks engine, fine geared jack, complete for $125 or with 4-inch pipe, rods, cylinder, 20 ft. 3-inch galvanized outlet pipe. Nearly brand new 2000 Redwood tank, 20 ft. stand, pumping plant complete cost new $350, our price on cars, $210, and guaranteed first-class. Second-hand farm machinery, all kinds. Anything a rancher wants we can supply. Call and see. Demmitt Co., upstairs, 120 N. Main St., Los Angeles.

For Sale—Gasoline Engines. We have the stock. If you want a second-hand engine with our guarantee for a year against all defects, see Bailie & Brandt Co., 943-945 N. Main St., Los Angeles.

For Sale—2 H. P. Fairbanks-Morse gas engine with or without jack. Cash buyer can have this cheap. Machinery Exchange, Main & Bruno Sts., Los Angeles.

DAIRY SUPPLIES.

Have You a Cow?—Have you a creamery? Have you a cheese factory? Write us. Everything used in either a dairy, creamery, cheese factory, or for handling milk, cream, butter, or cheese. We are in a position to quote you prices on entire creamery or cheese-making outfits. We make a specialty of only the latest and best sanitary machinery and supplies. Send us a list of what you want and we will quote prices which we feel certain will interest you. O. J. Weber Co., 225-227 East Sixth St., Los Angeles, Cal.

Milk Coolers, Bottles, Caps, brushes, Buhl milk cans, Sharples separators, Babcock testers, veterinary instruments, wood soled boots and shoes, and our celebrated "Prosperity" washing powder. Guy F. Kelsey, 108 E 8th St., Los Angeles, Cal

NURSERY STOCK.

Having bought our seed of Luther Burbank, who guaranteed it selected seed, mostly from Giant Crimson Winter Rhubarb, we feel in shape to offer choice Crimson Winter Rhubarb plants for this year's planting at reasonable figures. Write for particulars. B. B. Currier, Sea Bright, Cal.

Rivera Nursery, L. L. Bequette, Prop.—Wholesale and retail dealers in Northern and semi-tropical trees, shrubs, roses, green house plants, etc. Have good stock of apples, peaches, etc. Send for descriptive price list. 625 S. Breed St., Los Angeles, Cal.

Our Descriptive Price List No. 2 contains all novelties exhibited at the Pasadena Flower Show, also other new introductions by Dr. Franceschi; mailed free on application. Montarioso Nursery, Box 1500, Santa Barbara, Cal.

Strawberry Plants—Fine ones. A No. 1. Dollar and Jessies $3.00 per 1,000. Special prices on larger orders, or to the trade. J. A. Powell, R. D. 1, Box 1, Ripon, Cal.

Improved Superlative Red Raspberry Plants—Largest raspberry in cultivation. 100 plants, $5.00. Send for description. William Richard, 438 River St., Santa Cruz, Cal.

MISCELLANEOUS

For Sale—350 stands bees located near Los Angeles. L. E. Williams, Hemet, Cal.

Business Notes

RUEHL-WHEELER.

The Ruehl-Wheeler Nurseries of San Jose have found their business growing from year to year until more acreage and more office room are required. Their new price list just issued announces that after May 1st their new and permanent location at 163 South Market Street will be occupied by the enlarged concern. Until that time, however, the old location, 121 W. San Fernando Street, San Jose, will be the address to which to write to secure the 1010-1911 nursery price list. Citrus and deciduous trees, nuts, vines and a full line of ornamentals are all listed with price.

One of the most perplexing problems which has ever confronted fruit growers of California is the handling of the mealy bug. Fumigation is not effective unless used so frequently as to be prohibitive in price. Spraying is more satisfactory but must also be applied several times. We now note that the Western Wholesale Drug Co. is introducing the F. & G. Fungicide and Germicide, which is recommended for destroying not only the red spider and red scale and fungous growths, but also in treating mealy bug. This has been tested and found to work admirably by Mr. Wm. S. Eisenberg. The seriousness of the mealy bug situation should impel those who have occasion to deal with it to make a test of the F. & G. Spray.

Fertile eggs for hatching. Choice varieties. White Rocks, White Wyandottes and White Orpingtons at $1.50 to $4.00 per setting; $6.50 to $10.00 a hundred. Ducks—White Muscovy, Dark Muscovy, White Indian Runner, White Pekin, Buff and White Orpington, $1.00 to $3.00 a setting; $5.00 to $12.00 per hundred. Send for Circular. Pheasants' eggs in season.

WICK'S WHITE FOWL FARM, Moorpark, Cal

Household Department

GRAN'PA'S CHRISTMAS EVE.

I.

On Christmas eve, my gran'pa he
He'p me set up my Chris'mas tree;
An' nen he laugh an' shake his head
An' say it's time 'at I'm in bed;
But I say I'll not say good night!—
I'm go' to sit up; pa said I might
As long as I wan to, buhcause
I'm go' to wait for Santa Claus.

II.

Nen gran'pa he ist laugh again
An' say he en-vy me: an' nen
He get a great big rockin' chair
An' sit down in it over there;
An' take me on his lap an' say
It seems ist like 'twas yesterday
When he would wait by candlelight
For Santa Claus to come at night.

III.

So all the folks they go to bed,
But me an' gran'pa wait, instead,
An' he gets talkin' 'bout the time
When hes' a boy, ist same's if I'm
A grea' big man like him, or he
Ist a little boy like me;
An' how he'd watch for Santa Claus
To come down where the fireplace
was.

IV.

Nen I tell how some folks say
There ain't no Santa anyway!
An' he stomps 'at lame leg o' his
An' says: "You can tell them folks
there is!"
An' nen he tell me how he brought
The bestest gift he ever got—
'At Santa on one Chris'mas day
Give him my gran'me, anyway.

V.

An' nen I laugh, but he don't speak—
A grea' big tear was on his cheek!
Buhcause my gran'ma's gone away
To some place where the angels stay;
An' so I hug my gran'pa tight!
An' next we know we've slept all
night!
An' I got lots o' things because
My gran'pa knows Santa Claus.

—Wilbur D. Nesbit.

SHEP'S CHRISTMAS.

Just a few miles from a city, and situated among the hills and rich lowlands along the bank of the Tennessee river, is a quiet little farm about which my story is concerned.

Shep was a dog, and a fine, handsome, big-hearted fellow he was. His master, who owned this farm, was very fond of him, and always provided for him just the same as if he were a member of the family. Great care was given to his food and comfort.

Many were the happy days Shep spent following his master on the farm and driving home the cows for the maid, and lounging about the fireplace to be petted and talked to. But somehow, things do not always stay good, and times changed for Shep.

One day the good man's wife died, and not long after her husband died, too. The farm was sold to strangers, and the people who bought it had more dogs than they needed, so what did they do but scold at Shep and kick him and refuse him food.

One day he ran as fast as a hungry dog can run to get away from rocks and hot water, and never went back again. It was the day before Christmas, and how different it was from the way Shep had always spent Christmas before. His master had always let him go on hunts with other dogs and have great fun in running and barking over the hills and woods after squirrels and rabbits and quail, but those good times were gone now for him and he was lonely and friendless and hungry, and his long shaggy hair that his master had kept so clean was dirty and changed, for he did not know how to give himself good baths in the pond as his master had done—baths that used to make the big, white spot on his breast shine so bright against his black hair.

On this Christmas eve he reached the limit of all he could bear, so he ran on and on until he reached the city, and, not being used to such a big place, he was puzzled to know what to do and where to go. But he was so tired and weak he did not have life enough to care, so he just wandered wherever his feet took him.

At last he was so overcome he lay down in a strange place and fell asleep. He did not notice where he was. He did not care. He was glad to get away from rocks. After a while he awoke and looked around, and found he was in front of a large, fine dwelling, and there was a crowd of merry children playing in the yard and talking about Christmas. Shep wondered if Christmas would bring him a bone or anything to eat, for he was hungry. He loved children in better days, and he looked lovingly at the merry group in the big fine yard and thought to himself how many nice bones and good things to eat there must be in the kitchen of such a fine place.

But as much as he longed to go and romp with them, he remembered the many times he had been driven away, so he did not go, but he was so hungry he could not resist the temptation to steal around to where the barrels sat in the back of the yard. While he was climbing up on one, he heard the gentle-looking mother of the children say, "O, husband, look what a fine dog. Do let us call him and give him to Baby Frederick for a Christmas gift tomorrow. See how hungry he looks." And then she called to Shep, "Come, sir; come here!" in such a sweet voice poor Shep lost no time in going to her, but was soon to be disappointed again. The husband objected and said he did not see he was a fine dog; that he looked like a dirty thief, stealing out of barrels, and turning to Shep he said, "Be gone, sir!" Business had gone wrong with him, and he was in a cross mood. He then asked his wife for his dinner, and said he was in a great hurry. She soon had it prepared, and just as he was finishing his meal he heard wild screams in the yard among the children, "Mamma! Papa! Run! Run! Oh! Oh! A cow is killing Frederick! Oh! Oh!"

The father forgot his mood and rushed into the yard, expecting to find his baby dead, for there was a vicious cow in the neighborhood that hated children. With one bound he was on the spot, and there before his eyes was dear old Shep holding the mad cow by the throat and the cow kicking and moaning but unable to get loose. Shep had saved the child. The next moment found the father with his boy in one arm and the other around the dog's neck, and all the children with their mother trying to see which could hug Shep the tightest. They forgot his dirty coat and his starved look. They just thought of one thing—the dog had saved their baby boy.

Shep had a kennel that night and more to eat than he wanted. He was devoured with hugs and kisses. He

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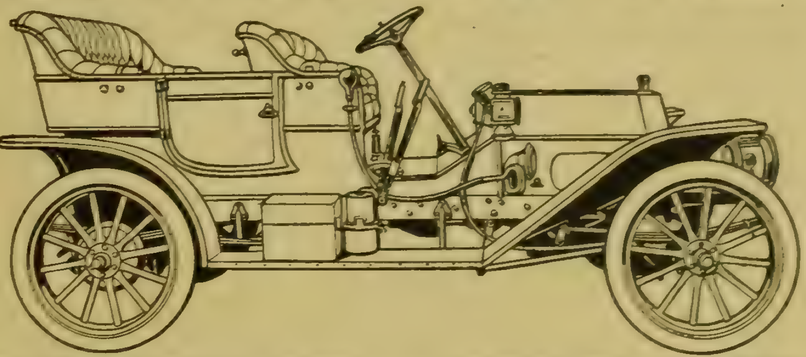

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also had a good bath, and then they saw what a beauty he was.

Christmas morning a collar was put around his neck, and baby Frederick became his proud master. Shep's sad life was at an end. He had a home.—Ex.

IS THERE A SANTA CLAUS?

Many years ago a little girl named Virginia O'Hanlon wrote to the editor of the New York Sun, the late F. P. Church, and said:

"Dear Editor: I am eight years old. Some of my little friends say there is no Santa Claus. Papa says 'If you see it in The Sun it's so.' Please tell me the truth; is there a Santa Claus? —Virginia O'Hanlon."

To this trusting child the great editor wrote an editorial reply that seems worthy of wider reading. He said:

"Virginia, your little friends are wrong. They have been affected by the scepticism of a sceptical age. They do not believe except they see. They think that nothing can be which is not comprehensible by their little minds. All minds, Virginia, whether they be men's or children's, are little. In this great universe of ours man is a mere insect, an ant, in his intellect, as compared with the boundless world about him, as measured by the intelligence capable of grasping the whole of truth and knowledge.

"Yes, Virginia, there is a Santa Claus. He exists as certainly as love and generosity and devotion exist, and you know that they abound and give to your life its highest beauty and joy. Alas! how dreary would be the world if there were no Santa Claus! It would be as dreary as if there were no Virginias. There would be no childlike faith then, no poetry, no romance to make tolerable this existence. We should have no enjoyment, except in sense and sight. The eternal light with which childhood fills the world would be extinguished.

"Not believe in Santa Claus! You might as well not believe in fairies! You might get your papa to hire men to watch in all the chimneys on Christmas Eve to catch Santa Claus, but even if they did not see Santa Claus coming down, what would that prove? Nobody sees Santa Claus, but that is no real sign that there is no Santa Claus. The most real things in the world are those that neither children nor men can see. Did you ever see fairies dancing on the lawn? Of course not, but that's no proof that they are not there. Nobody can conceive or imagine all the wonders there are unseen and unseeable in the world.

"You may tear apart the baby's rattle and see what makes the noise inside, but there is a veil covering the unseen world which not the strongest man, nor even the united strength of all the strongest men that ever lived, could tear apart. Only faith, fancy, poetry, love, romance, can push aside that curtain and view and picture the supernal beauty and glory beyond. Is it all real? Ah, Virginia, in all this world there is nothing else real and abiding.

"No Santa Claus! Thank God! he lives, and he lives forever. A thousand years from now, Virginia, nay, ten times ten thousand years from now, he will continue to make glad the heart of childhood."

DON'T SHIRK.

Point out the man who today is at the front, and we shall name him confidently as one who never shirked, who always gave an honest day's work, and who never failed to take a lively interest in his employer's affairs.—Ex.

THE CHRISTMAS PUDDING.

The essentials of a plum pudding found in a great number of receipts, both printed and in domestic use, do not vary greatly. Almost all, whether rich or plain, call for fine bread crumbs, suet, sugar, raisins, currants, eggs, milk (sometimes omitted), salt, and spice. In addition to these ingredients, others not unusual are citron, candied orange and lemon peel, also juice and grated rind of these fruits, almonds and other nuts, wine, rum or brandy, cream, figs and dates, molasses and occasionally flour and soda.

Wetting should be only sufficient to bind smoothly, and where a large number of eggs and also wine or brandy are used, milk is often not required. The old-fashioned English plum pudding, to be safely kept indefinitely and that could be sent around the world if necessary, was not at all unlike a rich fruit cake. The long boiling or steaming, instead of baking, of course avoids any hard crust and retains softness. A plain plum pudding can be baked in a moderate oven if more convenient.

Individual pudding molds can be had to suit the prevailing fancy for serving separately, but for the Christmas dinner the full-sized family pudding makes a much more effective entrance. The receipts that follow are of graduated plumminess and also show different methods of handling:

English Plum Pudding—Three cupfuls of fine bread crumbs, two cupfuls of chopped suet, two cupfuls of sugar, two cupfuls of raisins, half of them chopped, one and a half cupfuls of currants, half a cupful of citron, half a cupful of candied orange and lemon peel, grated rind and juice of one orange and one lemon, one cupful of blanched almonds cut in strips, half a dozen figs chopped, one teaspoonful of cinnamon, half a teaspoonful of cloves, half a nutmeg, grated, half a teaspoonful of salt, two wineglassfuls of Madeira, or one of wine and one of brandy. Mix these ingredients thoroughly, and let them stand for forty-eight hours in a covered jar. Brown sugar is preferable in all dark mixtures, or a little caramel added to white sugar deepens the color and helps in flavor. For the final mixing, stir two tablespoonfuls of flour to a smooth batter with a small cupful of rich milk and add, with eight well-beaten eggs. Or more eggs may be used and the milk omitted. There must be sufficient wetting to bind the whole smoothly. Boil or steam for at least five hours. A general rule is that such a pudding can hardly be cooked too long! Steam again for an hour or more before serving. A hot sauce goes to the table with it.

Plain Plum Pudding—One and a half cupfuls each of bread crumbs, finely chopped suet, and mixed raisins and currants; one cupful of sugar, half a cupful of citron or candied peels, chopped, salt, half a nutmeg, grated, three eggs, and a scant cupful of milk. Stale cake instead of bread crumbs, with less sugar, makes a good plain plum cake. This may be baked for two hours in a moderate oven in place of steaming.

Eve's Pudding—(In which the apple is involved.) Two cupfuls of bread crumbs, two cupfuls of tart apples, chopped, one cupful of raisins, also chopped, half a cupful of currants, one cupful of suet, two well-beaten eggs, a pinch of salt and a large teaspoonful of cinnamon. Moisten with a little sweet cider. A caramel sauce is especially good with it.

Graham Plum Pudding—Two cupfuls of graham flour, one cupful of milk, one cupful of molasses, one cupful of raisins, half a cupful of currants, half a teaspoonful of soda, a saltspoonful of salt. Mix all smoothly together, cover, and bake in a slow oven three hours; or boil three hours, then bake in a hot oven, uncovered, for fifteen minutes. Serve with a good sauce.

Foamy Sauce Will Do. Cream half a cupful of butter with a cupful of sugar; add a little grated nutmeg and set over boiling water. Flavor with wine or caramel, and add a small cupful of rich milk, hot, stirring until it foams.—Country Gentleman.

FOR A CHRISTMAS DINNER TABLE

In the center of the table set up a small tree, three feet or a little higher; dress it with silver tinsel, silver and red balls and red and white candles. Old-fashioned red and white candy toys can also be hung by red ribbons and later distributed with joking speeches to the guests for whom they have been chosen—such as pipes, pistols, spades for the men, scissors for the clever sewer, irons, tubs, brooms for the busy housekeepers, a harp for the musician, etc. All these forms can be bought at any candymakers' establishment.

At holiday-time the candy-makers often use for window decorations, long sticks of clear candy of various colors, and an accommodating manager will willingly color a number to order, although they are not as a rule made for sale. Those I used were eighteen inches long, one quarter of an inch thick, of clear twisted candy colored a bright red and costing twenty cents a pound.

The table was laid for twelve, and at each plate was placed a tripod made of these sticks, tied together near one end with narrow ribbon and in each tripod hung a little stocking, five inches long some made of red, some of white tarlatan filled with salted nuts and tiny chocolates.

This may sound like a meager decoration, but try it and see how the red sticks stand out against the white cloth and enhance the glitter of the silver-trimmed tree.—Woman's Home Companion.

ANTIQUITY OF CHRISTMAS CELEBRATIONS.

The festival of Christmas Day is one of great antiquity and was observed at a very early date. St. Chrysostom, Bishop of Constantinople, who lived in the fourth century, in one of his sermons still extant, and which is now 1507 years old, refers to the festival as even then of "great antiquity."

In the year A. D. 337 a strict inquiry was made into the probable date of Christ's birth and the twenty-fifth day of December was fixed as the one which harmonizes completely with the scriptural facts.

There are sermons extant preached on that day by Gregory and St. Basil, and "Christmas" is spoken of even by Clemens Alexandrinus, who died in the first century a short period after the death of St. John.

We also read that in the year A. D. 284, at Nicomedia, while the ruler was holding court in that city, he heard that the Christians were celebrating the "Nativity," whereupon he ordered the doors of the churches to be made fast and the worshipers to be consumed.

So you see that Christmas Day comes to us, if not hoary with frost and snow, as it is in some places, yet for us hoary with antiquity.

It is the center of all human history. The "B. C." and the "A. D." meet in it. It is the point of time that the ages past looked forward to with anxious hope—and that the ages to come will look back to with loving admiration.—San Bernardino Sun.

CHRISTMAS DON'TS.

Don't leave the cost mark on presents.

Don't let money dominate your Christmas giving.

Don't let Christmas giving deteriorate into a trade.

Don't embarrass yourself by giving more than you can afford.

Don't make presents which your friends will not know what to do with, and which merely encumber the home.

Don't give because others expect you to. Give because you love to. If you cannot send your heart with the gift, keep the gift.

Don't give too bulky articles to people who live in small quarters unless you know that they need the particular thing you send to them.

Don't wait until the last minute to buy your presents, and then, for lack of time to make proper selections, give what your better judgment condemns.

Don't decide to abstain from giving just because you cannot afford expensive presents. The thoughtfulness of your gift, the interest you take in those to whom you give, are the principal things. The intrinsic value of your gifts counts very little.

Don't give things because they are cheap and make a big show for the money. As a rule it is a dangerous thing to pick up a lot of all sorts of things at bargain sales for Christmas presents.

Don't leave your manners at home when you go shopping for Christmas gifts, shove your neighbor away from the bargain counter and snap at the tired clerk.

HOW TO KEEP CHRISTMAS.

There is a better thing than the observance of Christmas day—and that is keeping Christmas.

Are you willing to forget what you have done for other people and to remember what other people have done for you?

Are you willing to stoop down and consider the needs and desires of little children; to remember the weakness and loneliness of people who are growing old; to stop asking how much your friends love you, and ask yourself whether you love them enough; to try to understand what those who live in the same house with you really want, without waiting for them to tell you; to trim your lamp so that it will give more light and less smoke, and to carry it in front so that your shadow will fall behind you; to make a grave for your ugly thoughts and a garden for your kindly feelings, with the gate open—are you willing to do these things even for a day? Then you can keep Christmas.

Are you willing to believe that love is the strongest thing in the world—stronger than hate, stronger than evil, stronger than death—and that the blessed life which began in Bethlehem 1900 years ago is the image and brightness of the eternal love? Then you can keep Christmas.

And if you can keep it for a day why not always

But you can never keep it alone.—Henry van Dyke.

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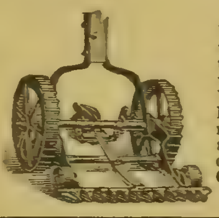

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MORGANHILL, CAL.
New catalogue ready

San Francisco and Los Angeles Produce Markets

Los Angeles Markets

LOS ANGELES, Dec. 21, 1910.

Butter.

Eastern storage butter is the best seller at the present, and is preventing an increase in the price of fresh local. In fact, there has been a slight decline in local quotations.

Prices to trade 2½c in advance of the following Produce Exchange quotations:

Extras	.35
Firsts	.32½
Elgin	.30
Cooking	.25

Cheese.

Local	.18
Northern, fresh	.18
Oregon Daisy	18@18½
Imported Swiss	.32
Domestic Swiss	.21@24

Eggs and Poultry.

Eggs took a tumble on Monday, going below the 40c mark, with a permanent decline promised by some buyers. Case counts are now quoted at 5c under last week.

Paying price f. o. b. Los Angeles is:

Local ranch candled	.37
Case count buying price	.33
Eastern fresh	.30
Eastern storage	.28
Seconds	.27

Dealers pay for live poultry f. o. b. **Los** Angeles:

Hens, per lb	.15@17
Roosters	.9
Fryers and roasters	.18@20
Broilers	.22@23
Turkeys	.20@22
Ducks	.17
Geese	.12
Squabs, per doz	1.75

Live Stock.

The following quotations are f. o. b. **Los** Angeles on all stock:

Hogs, 175 to 200 lbs	.8
Prime steers	.6
Heifers	.5
Calves, per lb	.6½
Sheep, ewes, per head, shorn	5.00
Lambs, per head	3.75@4.25
Wethers, shorn	5.00

Potatoes.

Wholesale prices are:

Highlands	1.60@1.75
Salinas	2.00@2.10
Lompoc	2.00@2.10
Oregon	1.85@2.00
Oregon, Early Rose	2.00
Nevada	1.85
Early Rose Northern	2.00
New potatoes	4.00@5.00
Sweets, yellow, per ctl	2.25

Onions.

Wholesale quotations:

White Rose local	1.85@2.00
Oregons	1.85
Australian Browns	1.65
Nevadas	2.25
Garlic	.8

Vegetables.

Wholesale quotations:

Artichokes, northern, doz	1.25
Beets, sack	.90
Beans, Lima	.8@10
Beans, green	.8
Beans, wax	.8@10
Brussels sprouts	.8
Bell peppers, lb	.8@10
Green chilis	.3@4
Cucumbers, box	1.00@1.25
Cabbage, sack	.50@60
Celery, crate	2.25@2.75
Cauliflower, crate	1.50
Carrots, per sack	.90
Egg plant, lb	.6@8
Horseradish	.12½
Onions, green, doz. bunches	.20@25
Leeks, per doz	.40
Lettuce, crate	.75@1.25
Oyster plant, doz	.40
Okra, lb	.10
Peas, lb	.8@10
Parsley, doz bunches	.20@30
Parsnips, doz. bunches	.40
Pumpkins, lb	.1@2
Radishes, doz. bunches	.20@25
Rhubarb, Crim. Winter, box	1.00@1.25
Spearmint, doz. bunches	.30@35
Spinach, doz	.20@25
Hubbard squash, lb	.1½
Summer squash	1.00
Tomatoes, crate	.70@90
Turnips, sack	.90
Watercress	.20@25

Citrus Fruits.

Navels	1.75@2.25
Grapefruit	2.25@3.75
Lemons	1.50@2.50
Tangerines	1.75@2.00

Fresh Fruits.

Wholesale prices on the market are:

Alligator pears	4.00@5.00
Apples, Belleflower	1.00@1.25
Spitzenbergs	1.75@2.50
Jonathans	2.00@2.50
Greenings	1.10@1.25
Pearmains	1.10@1.50
Pippins	1.20@1.35
Pineapples	.8@8½
Casabas, doz	2.00@2.25
Grapes, lug	1.25@1.50
Mangoes, lb	.10@15
Persimmons, lb	.5@7
Pomegranates, lug	1.00
Guavas, basket	.6@7
Pears, lb	.5
Bartletts, lb	.8@10
Winter Nelis	2.50
Strawberries	.10@15
Blackberries	.8@10
Raspberries	.15
Christmas melons	2.50

Dried Fruits.

Wholesale prices are:

Apricots	.13
Evaporated apples, fancy, lb	.11@12
Figs, box	1.65
Peaches	.7@8½
Nectarines	.10
Pears	.10@12½
Prunes	.7@12
Plums	.10

Beans, Dried.

Wholesale quotations:

Limas	5.00@5.25
Black eyes	5.50
Pinks	6.00
Lady Washington	4.25
Small white	4.00@4.25
Garvanzas	4.50
Lentils	7.00

Nuts.

Wholesale quotations are:

No. 1 soft shell walnuts	.15@16
No. 1 hard shell walnuts	.14
No. 2, all kinds	.11
Chestnuts	.10@12
Filberts	.15
Almonds, IXL, lb., new	.16@17
Pecans, polished	.15@17
Peanuts, Eastern	.7@7½
Peanuts, California	.6

Honey.

Wholesale quotations:

Extracted water white	.9½
Extracted light amber	.8
Comb water white	.18@19
Light amber	.15
Beeswax	.30

Hay.

Buying prices f. o. b. cars Los Angeles are:

Barley hay	13.00@14.00
Wheat hay	14.00@15.00
Tame oat	14.00@15.00
Alfalfa	12.00@13.00

Grain.

Wholesale selling price f. o. b. Los Angeles:

Wheat, new, ctl	1.80@1.85
Corn	1.60
Popcorn	3.50@4.00
Egyptian corn	1.75
White oats	1.80
Rye seed	2.00
Seed barley	1.25

Feed Stuff.

Wholesale selling price f. o. b. Los Angeles:

Alfalfa meal	1.10
Cracked corn	1.65
Cracked wheat	1.95
Shorts	1.80
Bran	1.55
Oil cake meal	2.50
Feed Meal	1.70
Rolled barley	1.20

San Francisco Markets

SAN FRANCISCO, Dec. 20, 1910.

Butter.

The butter market is not strong, though a 2c advance is noted during the week. In fact, a still higher price by 2c was noted during the last of the week, and a decline was made on Saturday.

Price to trade 2½c in advance of the following Produce Exchange quotations:

California extras, lb	.34½
California firsts	.30
California seconds	.27
Storage	.30½

Cheese.

California flats, new	.16
Cal. Y. America, fy., new	.16½@17½
Oregon, fancy	.16

Eggs and Poultry.

Eggs declined during the last few days of the week, and are now a couple of cents under last week's prices, with a rather weak condition of the market at this writing.

Official quotations of the San Francisco Wholesale Dairy and Produce Exchange are:

Fresh ranch extras	.38½
Firsts	.37½
Seconds	.33
Storage	.32

Hens, doz	4.00@10.00
Fryers, doz	4.50@5.50
Ducks	6.00@10.00
Broilers	3.00@4.50
Roosters, doz	4.00@7.50
Turkeys	.19@21
Geese	2.00@3.00
Pigeons	1.50@2.00
Squabs	3.00@3.50

Live Stock.

San Francisco prices, gross weight:

Steers	.4¼@5¾
Cows and heifers	.3½@4¾
Calves, lb	.4½@6¼
Hogs	.5@8
Milk lambs, unshorn	.6@6¼
Wethers, No. 1	.4¾@5
Ewes, No. 1	.4¼@4½

Potatoes.

Wholesale market quotations:

River White, cwt	1.30@1.40
Salinas Burbanks, cwt	1.70@1.85
Oregon Burbanks, cwt	1.50@1.60
Sweets, ctl	2.80@3.00

Vegetables.

Wholesale quotations:

Artichokes	.25@40
Beans, string, lb	.7@12
Cucumbers, hothouse, box	2.00@2.25
Celery, crate	1.50@1.75
Chili peppers, lug	.40@60
Egg plant, lb	.7@8
Okra, box	.40@60
Peas, lb	.5@7
Summer squash, box	.75@1.00
Rhubarb, box	.75@1.25
Tomatoes	.50@90
Garlic, lb	.2½@3

Onions.

Onions, California, sack	1.00@1.15

Citrus Fruits.

Navels, new	1.50@3.50
Grapefruit	1.50@3.00
Lemons	1.50@3.50
Limes	4.00@4.50
Tangerines	1.00@1.50

Fresh Fruits.

Apples, box	.50@85
Apples, Belleflowers	.90@1.00
Newtowns	.75@1.25
Spitzenberg	1.75@2.25
Bananas, Hawaiian	1.00@1.50
Grapes	.90@1.50
Huckleberries, lb	.7@10
Pears, Bartletts	1.50@2.00
Winter varieties	.60@1.00
Persimmons, box	.50@75
Pineapples, Hawaiian	2.00@3.50
Pomegranates	.50@1.50
Strawberries, chst	3.00@4.00
Strawberries, Longworths	8.00@10.00

Dried Fruits.

FRUITS—1910 crop, f. o. b., carload lots, per lb.: Apples, 8½@9¾c; apricots, 10¾@13c; do, Moorparks, 14c; peaches, 5½@7c, with a premium of ⅛@¼c on Muirs; prunes, bulk basis, Santa Claras, 6¼@6½c, with ¼c premium on 60s to 90s; outsides, 6@6¼c; figs, 6¼@7c for white, and 5@5½c for black; pears, 9¾@13c.

RAISINS—1910 crop: London layers, in 20-lb. boxes—6-crown clusters, $2.50; do, 5-crown, $1.75@2; 4-crown, $1.30@1.40; 3-crown layers, $1@1.10; do, 2-crown, 95½c@$1. Seeded, per pkg.—Fancy, No. 16, 5¼c; choice, No. 16, 4¾@5c. Loose Muscatels, in 50-lb. boxes—Standard, 4-crown, 4½c; do, 3-crown, 4c; do, 2-crown, 3½c. Dried grapes, 3c. Seedless—Muscatels, 3½c; Sultanas, 4½c; Thompson's, 4¾@5c.

Nuts.

Walnuts, No. 1 soft shell	.15
Walnuts, No. 1 hard shell	.14½
Almonds, '10 N P U	.13
Almonds, '10 Nonp	.15
Almonds, '10 I X L	.14
Almonds, Peerless	.12
Pecans	.14@17
Chestnuts, California	.6@8

Beans, Dried.

Limas	4.70
Pink	5.35@5.40
Black eyes	5.50@5.65
Small white	3.50@3.65
Large white	3.50@3.60
Kidneys	5.65
Garvanzas	3.25
Bayo	5.25
Horse beans	2.00
Red Mexicans	5.50
Cranberry	4.50@4.75

Hops.

Hops, coast, 1910	.14@17
Hops, 1909	.10@13
Hops, Oregon	.12@15

Honey.

Water white comb, '10	.15
Dark comb	.12½
Extracted white	.8
Extracted dark	.6½
Beeswax, lb	.24@30

Scott, Magner & Miller say:

Arrivals of hay for the week have been 2,900 tons, which is an increase of nearly 100 per cent over what we have been receiving recently.

The market values during the week have not been changed in any respect. Prices have been just about the same as heretofore. The dullness that has been noted for some weeks has continued throughout this week. Trade conditions have not improved in any particular. While arrivals have been larger, it has not been because the demand has in any way required it.

The fact that hay cannot be purchased in the hay centers from the present holders at prices that will permit of marketing in the San Francisco and Oakland markets at any profit is somewhat responsible for the present dull condition of the trade and the lack of activity and of any large operations.

Shipments on export account have been rather moderate for the last two weeks, while shipments along the coast have also been lighter during the same time.

There has practically been no alfalfa hay shipped into this market recently, and although the market is not active, yet the feeling is firm, for the reason that it is anticipated that our stocks on hand of alfalfa are lighter than they usually are at this time of the year. There is also quite a little interior demand for alfalfa hay.

Fancy wheat	12.50@13.50
No. 1 wheat or wh and oat	10.50@11.50
No. 2 wheat or wh and oat	9.00@10.00
Choice tame oat	11.50@12.00
Other tame oat	8.00@10.50
Wild oat	8.00@10.00
Stock hay	6.00@7.00
Alfalfa, ton	9.00@11.50
Straw	.40@50

Grain.

Wheat, No. 1	1.45@1.50
Barley, fancy	1.08¾@1.10
Barley, good to choice	1.06¼@1.07½
Barley, poor to fair	.97½@1.02½

Oats, white	1.45@1.55
Rye, new crop	1.50@1.55
Alfalfa seed	18@20
Mustard, brown	4½
Millet	2¾
Flaxseed	5@5½
Broom corn seed, ton	23.50

Feed Stuff.

Bran, ton	30.00@32.00
Feed cornmeal, ton	35.00@36.00
Cracked corn	35.00@36.00
Ground barley, ton	21.50@23.50
Rolled oats, ton	29.00@31.00
Middlings	34.00@36.50
Oil cake, ton	40.00@41.50
Cocoanut cake, ton	24.50@25.50
Mixed feed, ton	25.00@27.00
Shorts	31.00@32.50

Citrus Market

LOS ANGELES, Dec. 21, 1910.

The holiday trade being practically over, there is a slackening of demand and a consequent easing off of the market. On the whole the holiday demand has been very active, and offerings have been well received. Fruit is now all well colored, with but few cars going daily.

California lemons are still favorites in the New York markets, this season being the first when that market has received them more readily and at a higher price than the imported. Californias are showing up in remarkably good form, and the foreigns, if anything, are below their average.

Shipments.

Shipments of oranges to date, since November 1, from Southern California, 2,128 cars; of lemons, 613 cars; or a total of 2,741. To same date last season, 717 cars of oranges and 455 cars of lemons. Tulare county's shipments to date this year are 1,938 cars; last [illegible]ear, this date, 2,125 cars. Butte [illegible]ty's shipments to date are 404 [illegible] as against 300 this date last year.

[illegible]EW YORK, Monday, Dec. 19.—[illegible]ty-three cars of navels, one car [illegible]Jaffas, four of lemons and one of [illegible]a navels were sold. The market [illegible]asier on small sizes of navels, [illegible]trong on large sizes. Arizonas [illegible] easier. The market was unchanged on lemons. The weather was fair and warm.

NAVELS—	Avge.
Pioneer Special, Pioneer Ft Co	2.15
Hetch-Hetchy, Pioneer Ft Co	1.90
Iris D M Ex	2.90
Gold Buckle, R H Ex	2.70
Belt, R H Ex	2.90
Glendora Heights, A C G Ex	2.95
Golden Orange, I M P Riv Ex	3.10
Blue Seal, A C G Ex	3.00
Watchumna, T C C Ex	2.85
Forget-Me-Not, T C C Ex	2.50
Tulip, T C C Ex	2.15
Dos Palmos Xc, S Marino G P A	2.70
Merry Xmas Red, O G Cash	3.15
Sunshine Xmas	2.50
Golden Flower, I M P Red G O As.	2.75
Camellia Xf, Red M O Co	2.55
Crafton Xc, Red G O Assn	3.00
Golden Flower, Xf, Red G O Assn.	2.65
Niagara, Fy, Stewart Ft Co	2.35
Mariposa, Fy, Earl Ft Co	2.70
King Midas, Fy, C E, Whitcomb	2.50
King Midas, Ch	2.40
Heart of California	2.90
Independent Growers' Ft Co	2.65
Constitution	2.35
J E, Schram	2.35
JAFFAS—	Avge.
Palermo, Bates & Boalt	1.90

Boxes Arizonas — Cactus brand, $2.10. Half boxes—Desert, $2.40; Cactus, $1.40. Lemons—Pet, $3.15; Homer, $2.85; Las Fuentes, $2.75; Monticello Valley, $2.40; Rialto Crest, $2.65; Rialto Girl, $2.50.

CHICAGO, Monday, Dec. 19.—Lemons in moderate supply and ruling quiet. Boxes California fancy, 300s, $3.00 asked; 360s, $3.00 asked; off sizes, $2.25@2.50; extra choice and choice, 25c per box discount.

Oranges — California navels are steady, fairly active, and plentiful. There are fairly liberal receipts. Boxes, navels, California fancy, 96s, $2.25@2.50; 126s, $2.50@2.75; smaller sizes, $2.75@3.00; choice and extra choice, 25c per box less.

CINCINNATI, Monday, Dec. 19.—Cool. Market declining. Two cars lemons, one car navels and ten cars Floridas sold; one car navels withdrawn. Florida Brights, $1.90@2.60; Russets, $1.90@2.65.

LEMONS—	Avge.
Arab, S A Ex	2.35
Selected, Limoneira Co	2.05
White Cross, Limoneira Co	2.30
Duck, S A Ex	1.60
Bridal Veil, Limoneira Co	2.75
NAVELS—	Avge.
Bridal Veil, T C C Ex, Lindsay	2.30

CLEVELAND, Monday, Dec. 19.—Eight cars navels and one mixed car sold. Market lower. Snowing.

NAVELS—	Avge.
Mt Whitney, T C C, Porterville	2.40
Blue Label, C C Ex, Lindsay	2.30
Jasamine, D M, Duarte	2.35
Pioneer Special, Pioneer Ft Co	2.25
E High, A E High, C Assn	2.40
Pioneer Special, Pioneer Ft Co	2.10
Airship, V C, Fillmore	1.85
Iris, D M, Duarte	2.65
Holiday	2.30
Diamond Mtn, Fy, Randolph	2.20
E High, B E High, C Assn	2.10
LEMONS—	
Primrose, D M, Duarte	1.85

ST. LOUIS, Monday, Dec. 19.—Cold. Market firm on good navels, weak on lemons.

NAVELS—	Avge.
Pointer, A C G, Charter Oak	2.45
Canna, S B, Yerkes Spur	2.45
John Alden, S B, High	2.35
Pointer, A C G, Charter Oak	2.50
Volunteer, S A, N Pomona	2.50
Butte, Bates & Boalt	2.25
Antelope, T C C Ex, Naranjo	1.90
Camellia, Xf, Red M Dis	2.35
Pride of West, Pioneer Ft Co	2.05
Millwood	2.10
Red Label, T C C, Lindsay	2.20
Priscilla, S B, Highland	2.55
Jack Rabbit, S B, High	2.00
Planet, S S, Orange	2.35
Greyhound, S A, N Pomona	2.55
Planet, S S, Orange	2.35
Naranjo, I M P, T C C Assn	2.25
Pansy, Colton O G Assn	2.30
Green Dolphin	2.05

PHILADELPHIA, Monday, Dec. 19.—Eight cars navels, three cars lemons sold. Also thirty-three cars Floridas, $1.40@3.90. Grapefruit, $1.00@3.70; average, $2.20. Tangerines, $1.50@2.35; average, $1.85. Market strong on Floridas.

NAVELS—	Avge.
State, T C C, Lindsay	2.35
Birch Bark, Fy	2.50
Pioneer Special, Pioneer Ft Co	2.45
Ideal, High Prot Ft Assn	2.35
Hetch-Hetchy, Pioneer Ft Co	2.25
Marguerite, Xc, Earl Ft Co	2.10
Blue Label, C C Ex, Lindsay	2.60
Birch Bark, Fy	2.35
Brownie	2.40
Hetch-Hetchy, Pioneer Ft Co	2.25
Delicious, High Prot Ft Assn	2.25
LEMONS—	Avge.
Euclid, Or Growers' Ft Co	2.80
Pride of West, Pioneer Ft Co	2.40
Sardonyx, Ch, C C U	1.95
Hetch-Hetchy, Pioneer Ft Co	2.55
Flower, Growers' Ft Co	2.30
El Toro, Sd, C C U	1.85

PITTSBURG, Monday, Dec. 19.—Twelve cars sold. Market steady on both navels and lemons. Cold; snowing.

NAVELS—	Avge.
Golden Flower, Xf, Red G O Assn.	2.65
Hetch-Hetchy, Pioneer Ft Co	2.45
Green Dolphin	2.45
Airship, V C, Fillmore	2.15
Full Value, T C C, Lindsay	1.65
Blue Label, C C Ex, Lindsay	2.45
Pioneer Special, Pioneer Ft Co	2.65
Birch Bark, Fy	2.50
Redlands Best, Xf, Bryn Mawr	2.60
Blue Label, T C C, Lindsay	2.60
Naranjo, T C C, Naranjo	2.05
Tally-Ho, S B, Rialto	2.60
LEMONS—	Avge.
Protection, T C C, Lindsay	2.85
Blue Jay, O K Ex	2.05
Watchumna, T C C, Lindsay	2.90

BOSTON, Monday, Dec. 19.—Twenty-three cars sold. Raining. Market easier.

NAVELS—	Avge.
Serenade, T C C Ex, Sanger	2.20
Gold Buckle, R H, E High	2.90
Pinecone, S B, Highlands	2.25
Priscilla, S B, Highlands	2.60
Merry Xmas, O G Cash Assn	3.05
Ind Fy, Growers' Ft Co	2.15
Cal Sunshine, Fy, O G Cash Assn.	2.30
Marguerite, Xc, Earl Ft Co	2.00
Winter Haven, Stewart Ft Co	1.90
Redlands Best, Xf, M O Dis	1.80
Pioneer Special	1.60
Homer, Q C, Corona	2.75
Lochinvar, R H, E High	2.35
Laurel, Q C, Corona	3.10
Cannon, S B, Yerkes S	2.55
Bronco, West American Ft Co	2.45
Mariposa, Earl Ft Co	2.15
Camellia, Xf, Red M O Co	2.10
Pioneer Special	1.95
Constitution	1.85
Gobbler, Fy, Stewart Ft Co	1.70

Lemons—Lotengo, Fy, Sparr, $2.70; Crackshot Or, $2.25; Sardonyx, Ch, $1.70; El Toro, $1.40; Rey St. Fernando, $2.60; Tunnel, $2.15; Rey, $2.90; Tunnel, $2.35.

COUNTY LIBRARIES.

The first annual conference of California county librarians is to be held at the California State Library in Sacramento, December 28 and 29. This will be one of the most significant library meetings ever held in California, as it formally marks the inauguration of a movement whereby the entire people of any county adopting the county library system may have free and unlimited library privileges.

Although the plan of forming county library systems has been actively carried on in this state for only about a year, it has already been adopted by twelve counties, and several more are preparing to start in. Those already having adopted the system are Santa Barbara, San Joaquin, Alameda, Sacramento, Modoc, Tulare, Fresno, Kern, Merced, Madera, Yolo and Del Norte counties, all of which will be represented at the conference by the librarians in charge of the county library system. Other leading librarians, including William R. Watson of San Francisco, Purd B. Wright of Los Angeles, Charles S. Greene of Oakland, and James L. Gillis, state librarian, will attend.

The county library movement is being received with much enthusiasm all over the state, and is being watched with eager interest by the library world all over the United States, as it offers possibilities in library extension such as no other state in the Union has reached; and which, when fully adopted, will make the library as complete in its area of service as the school system is. It will be the work of the coming conference to plan and discuss the best means of making the county library most effective.

DAIRY OPPORTUNITY.

The sale of 170 dairy cows at the Santa Ana Jersey Farm next Tuesday offers opportunity for purchase of some of the best dairy stock in the state. Readers may recall photos of this dairy after the banquet in the barn at the time of its opening a year or more ago. The buildings and fittings of this dairy are almost perfect, and the cows the best. Most of them are Jerseys, though a few registered Holsteins are in the herd and will be sold. The average test of the herd is 5 per cent. The cows are milked at 3 a. m. and 3 p. m., so that prospective customers may visit the dairy prior to sale and witness the milking. Hogs, horses, chickens, wagons, implements—everything will be sold.

The farm is just in the outskirts of Santa Ana, Orange County, and Mr. J. T. Raitt, the manager, will give every opportunity to secure fullest knowledge of the stock. For fuller particulars see ad on another page of this Cultivator.

ARMSTRONG NURSERIES.

The John S. Armstrong Nurseries at Ontario have fallen into the habit of issuing every year a remarkably well printed and handsome nursery catalogue. The one issued this year is of 70 pages full of information on fruit trees and ornamental stock. The text is made plainer with lavish use of engravings, some being full-page half-tones, others smaller with several to the page. The fund of information furnished makes it well worth the asking, for it will be sent on writing to the John S. Armstrong Nurseries, Ontario, Cal.

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Price: ½ oz. 40c; 1 oz. 60c; 2 oz. $1.25; 4 oz. $2.00; 8 oz. $3.50; 1 lb. $6.00

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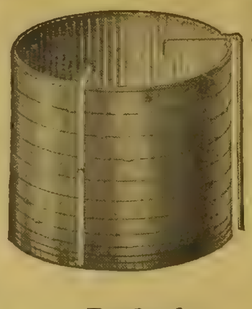

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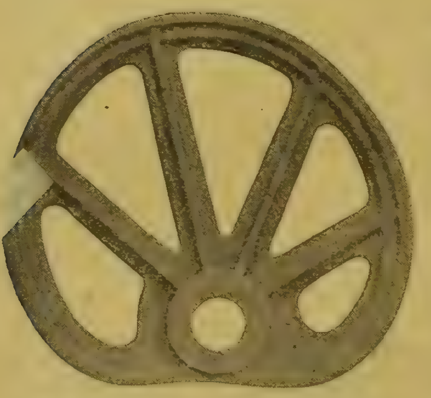

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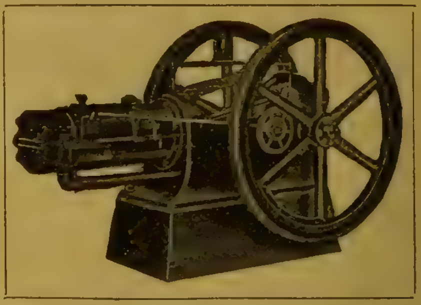

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California Cultivator

An Illustrated Weekly Magazine, Devoted to the Rural Home and Ranch. One Dollar per Year.

Los Angeles December 29, 1910 San Francisco

Possibilities of the Live Stock Industry in California

BLUE RIBBONERS AT THE CALIFORNIA STATE FAIR.

California was once famous for its thoroughbreds. Today its stables are as famous as once were those of Kentucky, but the wide attention attracted is not granted as it once was, that is as to the running horse. Drafters, coachers, and roadsters are more in evidence on the big ranches. The race track may have suffered, but the farmer, the truckman, and others have gained.

The greatest advancement in stock raising in the State is, however, along the line of dairying. The State has imported some remarkably fine stock during the past few years and has bred up from former importations much that is its superior. With the advancement and increase in production of dairy products, the swine industry has kept pace, and yet the State is importing annually millions of dollars worth of meats. In consideration of the matchless possibilities in production such a condition cannot continue, and the wise breeder is increasing his producing power to the limit. Speed the day when California supplies her own markets.

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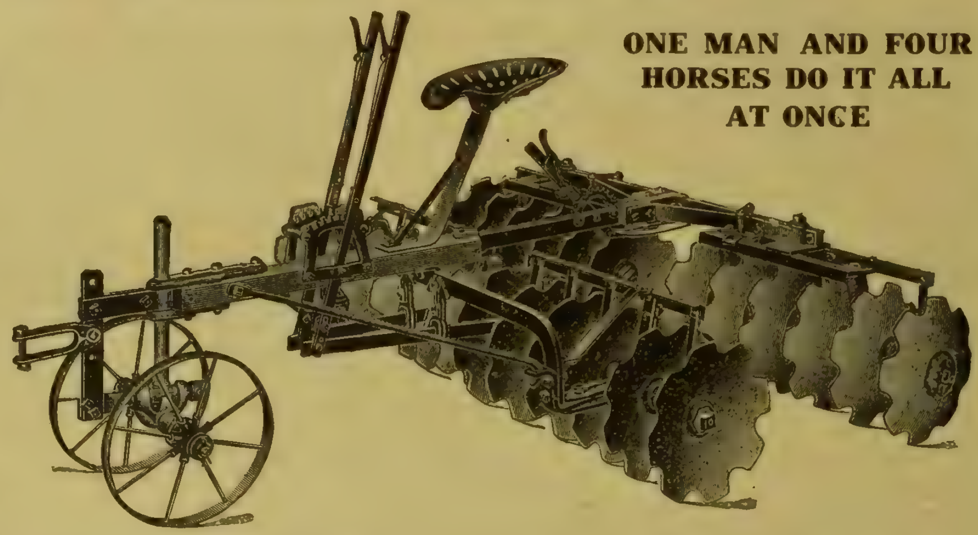

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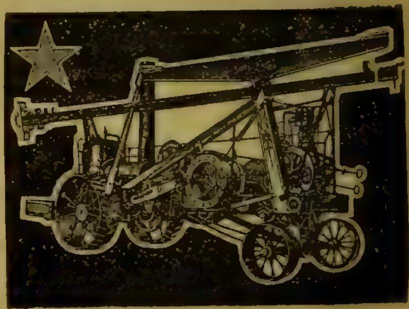

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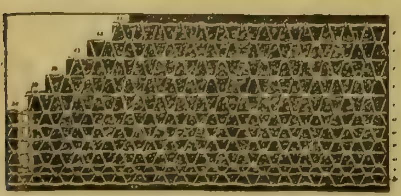

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GEO. C. ROEDING, Pres. and Mgr.

California Cultivator

Vol. XXXV—No. 26 Los Angeles, California, Thursday, December 29, 1910 Subscription $1 a Year

Look on this Smyrna Fig Picture and Then on This:

FIRST INTRODUCTION OF THE BLASTOPHAGA

Established in California Years Ago.—The Gates and other old Caprifig Trees

WALTER T. SWINGLE AND G. P. RIXFORD

(An Address delivered before the State Fruit Growers' Convention at Stockton.)

It will come as a surprise to those familiar with the history of the Smyrna fig industry in California to learn that recent investigations have convinced the writers that the fig insect (Blastophaga) has been established and breeding by myriads right in the heart of the San Joaquin Valley for over forty years.

During all the heated discussions of two or three decades ago as to the need of caprification to induce Smyrna fig trees to set a crop, the means of proof were right at hand.

The thousands who grew the Bulletin Smyrna trees to bearing age in the 80's only to be disappointed because of their uniform sterility, could have saved their crops by a few profichi from the trees we have discovered.

The Roeding orchard at Fresno which was maintained for so many years at a dead loss and serious financial risk to the owners because of Mr. Geo. C. Roeding's enthusiastic faith in the ultimate introduction of the fig insect, would have paid from the start if only it had been known that less than a hundred miles down the San Joaquin Valley was a huge caprifig tree producing multitudes of the Blastophagas every year.

The numerous and discouraging unsuccessful attempts to introduce the insect made from 1889 to 1898, need not have been made. The expense to the Department of Agriculture and the trouble taken by one of the writers to introduce and establish the North African Blastophaga in this state in 1890 were alike unnecessary.

John Bleasdale in the early 70's told Dr. Gustav Eisen of his observations on caprification in Portugal, thereby arousing Dr. Eisen's interest in the subject, so important to the later development of the Smyrna fig industry. Before this happened, however, Blastophaga was established in this state and caprification was occurring on a small scale (without artificial help on at least one California ranch.

Early in December, 1908, while examining the Smyrna fig orchards near Modesto, Stanislaus county, California, the writers heard on every hand complaints as to the inefficiency of profichi with which to caprify the young Smyrna fig orchards. Male trees, though planted simultaneously with the fertile trees, had not begun to bear soon enough and there was a lively demand for caprifigs from older male trees.

We were shown one old caprifig tree growing in a dooryard in Modesto, the fruit of which has been used successfully to caprify young Smyrna fig trees. This tree was about 30 years old and was doubtless sent out from the Bulletin office by one of the writers. We also heard of a tree, said to be much older, that had also yielded many caprifigs, used in the orchards about Modesto and Ceres, but did not at that time have an opportunity to investigate it.

In January, 1909, one of the writers was at Modesto again and looked up this tree, growing some ten miles directly west of Modesto. It proved to be a huge tree about 45 feet high with a spread of branches of 40 feet and a trunk 8 feet in circumference just below the branches. It is growing near the house on the ranch of Samuel Gates and was there in the late Summer of 1868 when he purchased the property. The tree was then 7 or 8 feet high and the trunk the size of a man's wrist. It had been set out in 1867 by Mr. Louis Adams of Stockton. Mr. Gates, his wife and his daughter (Mrs. W. F. Green) were very positive that the figs on this tree had always been full of "bugs." The daughter said "I am 36 years old and as long ago as I can remember I tried to find figs that I could eat, but they were all full of those little winged ants." It may be mentioned that late in the fall occasionally a fig is found that is not infested and is edible. A visit a few days later by the other of the writers convinced him likewise of the truth of this remarkable story.

During the second visit it developed that a Mr. Frazier of Stockton, who dug a well near the tree in 1869, said, "It is a male tree and will never bear fruit, but all the tres around (several other ordinary fruit trees had been set out by Mr. Adams) will bear bountifully as long as you keep this tree; so never cut it down." Probably because of this advice, and partly because of the fine shade the tree gave in summer, it has been spared during all these years, although at certain seasons it was quite a nuisance because of the worthless fruit that dropped by the bushel just outside the kitchen door. Only within the last few years have the superabundant profichi been utilized to some extent in caprifying the young Smyrna fig orchards around Modesto, barley sacks full of profichi being carried away containing Blastophaga so numerous as to blacken the bags as the insect escaped from the fruit and crawled out through the coarse fabric.

The oldest son, Mr. G. C. Gates, a mining engineer, living in one of the Bay cities near San Francisco, was a boy of 12 years of age when his father purchased the ranch, He went with his father to look it over previous to the purchase, was much interested in the fruit trees, and remembers distinctly that the fig trees were higher than his head. He is positive that the old one bore figs that contained insects as early as 1869. His independent testimony is strongly confirmatory of that given by his father, mother and sister.

He recollects that the tree always bore fruit from the time it was the size of a man's wrist, when his family purchased the ranch in 1868. He cut open figs many times and always found the "worms."

It may be noted in this connection that in old caprifigs that have dropped to the ground, often only the wingless male Blastophaga, not unlike small grubs can be found.

Additional evidence is presented in the following letter from Mr. Homer K. Pitman, pastor of the First Presbyterian Church at Modesto, himself a fig grower, who conducted both the writers to the Gates ranch and heard the detailed evidence twice:

Modesto, Cal., Jan. 26, 1909.

Mr. Walter T. Swingle,
Monterey, Cal.

Dear Sir: In addition permit me to give you some more information concerning the Gates caprifig tree. Mrs. Emily Ross, a neighbor of mine, moved to the old town of Tuolumne City in May, 1869. This is about three miles from the Gates ranch. She lived there two summers, coming back to Modesto in January, 1871. While there

(Continued on Page 664.)

THE PLAIN FACTS OF FIG WASP HISTORY

Absolutely no Foundation for Claims Concerning the Early Establishment of the Blastophaga grossorum in California

GEORGE C. ROEDING, FRESNO.

The recent paper read by Mr. G. P. Rixford at the Thirty-eighth Fruit Growers' Convention held in Stockton, entitled "The First Establishment of Blastophaga in California," to which Dr. Walter T. Swingle was a joint contributor, refers to so many matters with whihc I happen to be familiar, that I do not feel disposed to allow the statements made in this paper to go unchallenged.

To begin with allow me to say that I am not making this reply because I am in any way piqued because the credit which has been accorded to me for my part in connection with the importation and successful establishment of the Blastophaga in California will be taken away, because of the recent discoveries of Messrs. Swingle and Rixford. On the contrary, if facts in any way conclusive were presented to me, I think I am broadminded enough to give proper credit where it is due.

I do not propose to mince matters but shall take the paper read, from its inception, and I think I can show without a question of a doubt, that there is absolutely no foundation for the claims which have been made concerning the early introduction of the Blastophaga into California.

It just happens that since my boyhood days I have come in contact in one way or another with nearly all the parties mentioned in their paper, whose statements would have any bearing on this matter.

It seems the Gates tree growing in Stanislaus county ten miles west of Modesto, is the pivotal tree, where the Blastophaga has dwelt in peace for so many years without accomplishing the world of good for which it was intended. Had it only been in the hands of people who had a slight inkling of what was going on in this horticultural world of ours, the entire history of the fig business in California would have been changed.

Just think of it, during all the years from 1868 until 1908, when Mr. Rixford made his wonderful discovery, the Blastophaga has been in this Gates tree. Mrs. W. F. Green, Mr. Frazier, Mr. Adams, Mr. G. C. Gates, a mining engineer living in the vicinity of San Francisco, and Mrs. Emily Ross, whose statements are verified by Mr. Homer K. Pitman, pastor of the First Presbyterian church of Modesto, and a fig grower, were all thoroughly familiar with this insectiferous fig tree, but not a single one of them ever thought it worth while to direct the attention of interested paries, like the State Board of Horticulture, Mr. Rixford, Dr. Gustav Eisen and myself, who were vitally interested in the great fig problem from as far back as 1882, until the successful establishment of the wasp on my place in the year 1899. During this period of almost twenty years there was hardly a big daily paper in California, as well as all the horticultural papers, that did not contain articles pertaining to the fig from time to time.

It is needless to mention my own experience, further than to say that I was constantly held up to ridicule, and I was the only one who persistently followed up this subject from 1887 to 1899, when the Blastophaga was finally established on my place, then the Fancher Creek Nurseries, but now known as the "Roeding Place."

Let us show in a nutshell the fallacy of the statements in reference to the Gates tree. It was planted in 1867 and from the very beginning it was infested with the winged ants as described by Mrs. Green, and as worms by Mr. G. C. Gates, the mining engineer. Why does Mr. Rixford give credence to their statement? Simply because he happened to plant some cuttings of caprifigs a few years ago on which were infested figs, and which kept in perfect condition for several months after they were planted. This was nothing unusual and did not give evidence of a single fact from which to work out such a remarkable thread of romance in reference to the Gates tree. Let us consider the matter further. We will concede for the sake of argument that this fig had mamme or wintering figs when it was planted. I know for an absolute fact that even if this were true, that it might possibly have produced a few profichi figs, and thus harbored the first generation of wasps, that it would not produce the mammoni and mamme crops and the insects would have been lost the first year after planting. I have been growing thousands of caprifigs in nursery rows and have hundreds of them in my own orchard, and also have had many trees under observation in other localities where I have sold stock, and know positively that none of the trees carried a succession of crops until they were at least four years old, and in most cases they had to be five years before they could be depended upon to carry all the crops necessary to provide a home for the wasp.

This Gates tree was an unusual sort; it carried all the crops from the date of its planting in 1867 to 1871 when all record of it was lost until Messrs. Swingle and Rixford made their remarkable and far-seeing observation in 1909.

Next in order comes Mr. W. B. West. I am pleased to say I had the pleasure of knowing him and appreciate the fact that he was a very progressive nurseryman, who was deeply interested in the horticultural advancement of the state. I don't think he ever had occasion to give much thought to the necessity of having an insect for the successful production of figs. The only contention which he ever did make, was in relation to the claims of G. N. Milco as being the introducer of the White Adriatic fig.

It is extremely doubtful that Milco ever made the claim that the so-called flies were necessary for the production of figs for the reason that in the year 1885 and for several years thereafter he not only claimed that he introduced the White Adriatic fig (which, of course, was not true), but that it was also superior to the Smyrna fig. Under the circumstances he would be the last one in the world to claim any beneficial results from the "flies," which were exhibited to Mr. and Mrs. J. D. Peters, and further, because he happened to exhibit a few flies, is it not more than likely that they were the fermentation fly, which is so commonly found on the White Adriatic? Is there any proof that they were anything else?

The wasp was established in the Lathrop trees from consignments made by me.

The Modesto tree which is also referred to, was supplied with insects from consignments sent by me to L. W. Ordway, a nurseryman and florist,

(Continued on Page 665.)

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PEDIGREED NURSERY STOCK.

Did you ever stop to figure out just why there are so many apparently vigorous and healthy fruit trees that have only a partial crop, and sometimes no crop at all? Again, did you ever see an orchard in which all the fruit trees were producing anywhere near the same amount of fruit? I have my first orchard yet to see where all the trees were producing approximately the same amount of fruit, unless it is one that I have seen which has long since reached the bearing age and as yet has not produced any fruit at all. We go through an orchard of fine vigorous trees and notice here and there one loaded with fine uniform sized fruit and the remainder of the trees grading from these down to almost no crop, with fruit that runs from fancies down to poor seconds. Did you ever stop to investigate as to the reason for this variation? One reason is poor selection of parent trees. If you were an up-to-date stock grower you would not hesitate for an instant. You would head your herd with a high-grade male and then begin weeding out the poor brood animals. The same theory can be made to apply to plant breeding.

Pedigreed fruit stock is the remedy for poor producing orchards. Of course, I am not saying that simply setting a high-grade nursery tree is a guarantee for a big crop of fruit. The same principle applies here as in livestock; that is, the tree must have care, food, and congenial climatic conditions. What is pedigreed nursery stock? It is young trees produced from parent trees that are known to have a good record for a long succession of large crops of fine fruit.

There are very few nurserymen who attempt very seriously to put pedigreed stock on the market. Some of the men who deal in small fruits advertise this kind of stock. However, if the prospective fruit grower can wait for the trees he can produce his own stock. Of course, this season is too far advanced for propagating nursery stock by budding; but for those who prefer grafted stock it is not. However, the trees from which the scions are to be taken should be selected at once, as after the fruit is harvested the owner of the trees is apt to forget just what trees produced the finest grade of fruit. If it is possible, get the history of the tree for several years back; in fact, it is very necessary to know just what kind of crops the tree has produced in the past. Sometimes a poor tree will have an exceptionally fine crop one year, then lapse into its old habit of producing small crops, or a large percentage of off-shaped fruits. What you want is a parent tree that has a record for the maximum number of big crops of perfect fruit and also makes a fair wood growth. Label these trees and when you are ready for your scions, which will be in February and March, select the terminal wood that has made a moderate growth. See to it that this wood is well matured and free from pests. Do not, under any circumstances, take the shoots that are produced from the body of the tree. By doing so you will defeat the purpose for which you have taken so much trouble. These water sprouts are unfruitful wood and will have a tendency to produce a like tree. Use only wood of the past summer's growth. Finally, it is almost as necessary to know the man from whom you are getting the scion wood as it is the tree. If he is anyways unscrupulous he might misrepresent his tree in order to make the sale of scion wood or just to make it appear that his trees were better than his neighbors.'

Collect the scion wood very carefully and keep those from different trees separate. Either put the number of the tree on the scions and keep the record in a book provided especially for that purpose, or put the record with the scions. The former method is much preferable. In grafting, bring the scions from one particular tree into the work room, and make them up. Pack the grafts in a box and record the number so that you will be absolutely certain as to their parentage; in fact, an accurate record must be kept from the time the scions are cut until the young tree is set in the orchard.

How about the orchard that has been set for several years and as yet has given no results? At the present time there are very few orchards that have anything like a uniform production; that is, all the trees do not produce anything like the same amounts. As I have said before, I have seen orchards running from 6 to 10 years of age that were not producing anything, or only a few of the trees were producing paying crops. A defect like this can be remedied if the proper care is given in selecting scions and top working the poor producers. The new top would require from four to five years to come into profitable bearing, but when it did the increased income would more than repay for the trouble.

The effect of pedigreed nursery stock on the production of apples can be readily seen. We do not doubt, for an instant, the results that can be obtained from the use of pedigreed livestock. It is only the plodder nowadays that does not attempt to improve his livestock. The time is coming when the same will apply to the orchardist or nurseryman. A few growers are already taking steps in this direction. I know, personally, one man who has a fifteen-acre young orchard of pedigreed stock, and also a large orchard company that is taking steps to establish a nursery of pedigreed stock to be used in setting its holdings.—C. A. Cole of Oregon Ag. Col. in Pacific Homestead.

PRUNING CITRUS TREES IN FLORIDA.

The pruning of citrus trees in Florida is a different problem than in California. Here the orange is cut so as to admit air and light, remove nonbearing wood and sucker growth and to a certain extent renew top and balance the tree. In Florida the control of disease is a factor as we note in the following in the Fruit and Produce News:

There are possibly no two diseases of the citrus family more troublesome in Florida than "die-back" and "wither-tip" in their various forms. Both cases require different treatment. Experience so far has taught us that the only true and sure way to cure wither-tip is by thoroughly pruning. Running over and only half pruning usually does as much harm as

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Also Placentia Perfection, in both grafted and seedling trees; Seedling Santa Barbara Softshell and Ford's Improved. California and American Black Walnut Seedlings.

Walnuts are being planted more extensively than ever before, having proven highly profitable in many parts of this State. They yield splendid returns, and with proper care and cultivation, respond with such bountiful crops it will be well worth your time to consider the advisability of planting these trees.

Almonds

Drake's Seedling, I. X. L., Ne Plus Ultra, Nonpareil, Texas Prolific, Jordan. These are selling rapidly, and we will soon exhaust our surplus. Write today for reservations of stock and prices.

New Products of the Trees

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good. When pruning great care should be taken to saw or cut as close to the base or trunk of the tree as possible, and to make smooth cuts and by all means do not leave any projecting stubs. This precaution should be carried out to the letter because diseases from these stubs are almost certain to occur when wither-tip fungus is present.

Another thing of great importance is cutting the branches close to the tree as the cut surfaces soon heal over, leaving a nice, smooth body; also if the trees are to be washed, or doctored, it can be executed in one-third the time! besides, it adds beauty to the trees. Nothing looks worse than an orchard all full of stubs. In cutting out limbs and dead brush always saw or cut behind the dead timber, or, in other words, always cut in the green timber as it soon heals over and prevents diseases from spreading and helps the tree to take on new life and growth.

In pruning for wither-tip great care should be taken to remove every limb or branch that is diseased, as it is important to get rid of all the poisoned branches and prevent the disease from spreading. Withertip can be distinguished in various ways—namely, as the limbs or branches on the outside turn dark brown and the outside bark will continue to get darker until they are dormant, while the inside bark near the body of the tree will keep continually falling and the leaves will turn yellow and in a short time the limbs will be bare. Trees that die from this disease soon become very brittle and rot in a short time. When the trees are taken with withertip, if fruit is on the tree, it can be noticed by the fruit dropping to the ground.

There are various forms of "die-back," and various causes. First, too much water; second, drouth; third, too much ammonia in the soil. This seems to be the main cause as a general rule, caused by using high-grade ammoniated fertilizers. When the trouble is from too much ammonia, only phosphoric acid and potash or salts of potash should be applied and in a short time the excess of ammonia will be used up and the tree will return to its normal condition. Every form should be treated differently. I will not enter into details on the various forms of die-back in this communication, or the cure, as it will take too much space.

CARE PAYS.

Commenting on the profitableness of care in packing which Florida growers are learning, the Fruit and Produce News says:

Now, the Florida orange is thinner skinned and juicier than the California navel, and consequently deserves even better treatment. That Florida oranges in general have a reputation for poor keeping quality may not rest wholly with the orange. If it was given the show that these California navels received it might prove itself in a way that would surprise the natives. That great improvement can be made along this line has already been proven by Mr. Temple. He states when he first began to ship his oranges to the New York auction that his average was at least 30 cents below the average received for other Florida oranges, but after he built his new house at Winter Park and began to handle and pack oranges as they should be packed and handled, he brought his average up to nearly a dollar a box above the average market price for Florida oranges. Remember this was done in the open market where no favoritism can be shown, so that no one can claim that he was favored because he was an Exchange official.

A PEST OF THE MANGO.

As the mango is becoming somewhat of a factor in California Horticulture the following from a letter of Assistant Chief Marlatt of the Bureau of Entomology, has points of interest:

The most serious insect pest of the mango in oriental countries is the mango weevil (Cryptorphynchus mangifera Fab.). This weevil is classified with the boll weevil and the chestnut weevil, which, aside from its well-known destructive work on the mangoes is sufficient indication of its undesirability. It is probably of Indian, or at least of oriental origin, and has already obtained foothold in most of the important mango growing countries, being carried readily with seed for planting. It now inhabits all of the mango regions bordering on the Indian Ocean and adjacent islands, and throughout the East Indies, including the Philippines and other groups of South Pacific islands. It has gained foothold similarly in South Africa and Madagascar and numerous other points. Fortunately this country is so far free from this pest, and if it can be kept out the mango industry which it is hoped to develop in Florida and perhaps in the other warmer parts of this country can be given a very great advantage over other mango producing regions of the world.

As already indicated, this mango pest belongs to the weevil family. The egg is deposited in the fleshy part of the fruit, where it hatches, and the young grub burrows at once through the seed itself and develops there into the mature beetle. The green mango soon heals up over the egg slit, and there is very little if any exterior indication of infestation. The weevil or beetle developed in the seed is about a quarter of an inch wide and an inch long and dark brown in color. It remains in the seed for some time, and may thus be easily distributed with seed for planting or with the ripened fruit.

Protected as it is by the tough seed coats and, in fact, buried in the seed itself, it is not possible to destroy it by fumigation with any certainty. The only means of determining infestation is by opening the seed pod and removing the papery covering of the seed itself, when, normally, the gnawing and excrement and discoloration due to the work of the larvae and the weevil which develops from it can be noted. Therefore, it is manifestly a very dangerous thing to import into this country in regions where mangoes are grown any foreign grown mango seeds or fruits. Where there is no mango fruit, the danger, of course, is perhaps negligible, as no other food plant is known for the mango weevil. Still if large numbers of these weevils should be introduced and liberated, they are long lived and might easily be carried on railway trains to regions where they might make lodgment. It is, therefore, desirable, should planters wish to import seeds for planting, that they make special arrangements to have them inspected on arrival by competent authorities who are familiar with this dangerous pest.

It has already been stated that this mango weevil is the principal enemy of the mango, practically wherever this fruit is grown. In the Hawaiian Islands Mr. Von Dine, formerly Ento-

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mologist of the Hawaii Experiment Station, reports that the first year of his examination he found 60 per cent of the mangoes infested; the following year 80 to 90 per cent, as many as four larvae being found in a single seed. While the mango weevil destroys primarily the seed of this fruit, it is also believed by growers that it hastens the maturity of infested fruit and cause a greater percentage of them to fall.

Inasmuch as this insect passes its entire development within the seed. it is beyond the reach of insecticides and fumigation, and the only remedy is to collect and destroy all of the fallen or supposedly infested mangoes.

It is most urgently important now, however, for Florida to keep this weevil out. Mango seeds are now probably being imported into Florida by various growers, and the danger of such importation should be thoroughly understood, and whatever authority the state may have to prevent or control such importations should be put in operation.

CITRUS PESTS IN FLORIDA AND CALIFORNIA.

By A. W. Morrill, Entomologist, Arizona Horticultural Commission.

The prominent citrus pests established in this country belong to groups of insects commonly called scale insects, whiteflies, thrips and mites.

The group of scale insects, or the insect family Coccidae, is in scientific literature divided into several subfamilies, but only two main divisions will be mentioned here. Those which, after hatching and settling down to feed remain practically stationary throughout life and secrete a shield-like or scale-like covering which affords protection to the insect, are known as armored scales. The citrus pests belonging to this group are known by the following common names. Purple scale, long scale, Florida red or circular scale, California red scale, yellow scale, oleander or lemon scale (not the same as the soft scale, which is in Arizona often called the oleander scale) chaff scale and orange Chionaspis. Of the foregoing list, all except the yellow scale are found in Florida and all except the chaff scale and orange Chionapis occur in California. As will be shown in later numbers of this series of circulars, not everyone of the insects which occur in both states is considered a pest in each. In Florida, the principal armored scale pests are the purple scale, the Florida red scale and the long scale; in California, the red scale, the yellow scale and the purple scale are the worst pests of this group.

Those scale insects which retain their power of locomotion throughout life and secrete no protective covering, or at the most only a covering of loose wax, may be grouped for convenience under the name of unarmored scales. The insects in this group are not all as closely related as those in the preceding group. The common names of the unarmored scales which infest citrus trees are: the soft scale, black scale hemispherical scale, barnacle scale, Florida wax scale, cottony cushion or fluted scale, and the citrus mealy-bug. All of these pests occur in both states, with the exception of the Florida wax scale, which has never been found in California except in quarantine.

All scale insects, both armored and unarmored, when mature, are provided with wings only in the male sex. These winged males are very inconspicuous and are rarely noticed by the casual observer. Owing to their wingless condition the adult females are not a factor of any importance in the spread of scale insects from tree to tree.

The whiteflies or insects of the family Aleyrodidae resemble scale insects very much in their appearance and method of devleopment, except that the adults of both sexes are winged. The spread of these insects from tree to tree and from grove to grove is consequently more rapid than in the case of the scale insects, making their control a more difficult problem. There are several species of whiteflies which occur on citrus trees in the United States, but of these only three have thus far proven destructive. The two most destructive are well established in Florida, and are known by the common names of citrus whitefly and spotted wingfly; the third has recently been introduced into the same state from Cuba and may be called the Cuban whitefly. The first two species have each been introduced into the state of California, but the spotted-wing fly is believed to have been exterminated there.

Only one species of thrips, Euthrips citri) has thus far proven a citrus pest. This species is widely distributed in the citrus growing regions of California and Arizona, but thus far has not been found in Florida. The species of thrips which occurs so abundantly in citrus blooms is not the injurious species, but a closely related one, according to the agents of the United States Department of Agriculture who have investigated the matter. Thrips are usually minute insects, with slender bodies. Individuals are not conspicuous, but when the insects are abundant their presence is readily detected. The citrus thrips is provided with wings and presumably can fly, although a nearly related species which has been studied by one investigator rarely if ever uses its wings.

Mites, the last group referred to in the opening sentence, are more closely related to spiders than to true insects. They are wingless and usually have four pairs of legs instead of three, as do true insects. There are three species of mites affecting citrus, and all three are found both in California and in Florida, being known as the rust or silver mite, the six-spotted spider, and the red spider. These pests are minute in size and cannot be recognized without the aid of a magnifier.

It may be well to mention, in addition, an insect belonging to a group not heretofore referred to. This is the Morelos orange worm of Mexico, which belongs to the insect order Diptera, or two-winged flies, to which also belong the housefly and mosquitoes. The maggot of this pest infests the pulp of the fruit, producing a condition comparable to, but much more objectionable than, that caused by the codling moth to the apple. Fortunately the orange worm does not occur in this country.

Many orange-packing houses which were rushed with fruit-packing a couple of weeks since are now idle. The Chino Sugar Factory is now shipping out seeds to those who have contracted to furnish beets.

Much grain is being drilled in Eastern Riverside county.

The Ornamental Garden

THE LAWN OR YARD.

In planning a new home, if you prefer a large lawn to a small yard, do not hesitate to lay out the preferred tract of land, for a large lawn will "raise" more pleasure than it would wheat or corn.

But whether the farm yard be large or small there is no reason why it should not be beautiful.

Let the up-to-date farmer seed his yard to grass, clear up to the front and back door, the same as the up-to-date townsman, and let the grass at all times be mowed down short.

Country people love grass as well as city people, but they seldom have it until they move to town.

I happened at the home of a retired farmer the other day. The family resided in a fine, comfortable residence, and the yard was beautifully seeded to grass. The thought came to me that this man would never have lived that way had he remained on the farm. But why not? Why not live the same on the farm as in town? And, best of all, on the farm, when you slip out in your own yard to bask in your haven of rest, the critical eyes of your neighbors are not peering at you.

Why not prepare a haven of rest down on the old farm, and remain there to enjoy it, and at the same time induce the children to love it

There should be a generous supply of shade trees and evergreens in both back and front yard. And, as a rule, the trees would look better set in single specimens and in irregular groups instead of in stiff rows. The trees should not be set so as to hide the dwelling; but so there should be a good view of the residence from the road, and a good view of the sun from the kitchen.

At a very small outlay of pocket change a nice variety of trees might be purchased, and with good care the trees will soon reward you with a rich mass of magnificent beauty. The lawn should also be planted to a nice variety of flowers. Flowers are essential to a well planned home.

The care of flowers is pleasant and instructive work, and it is work that pleases almost every woman and girl. Begin with a few flowers and learn their culture, and yearly add more, until your bare, unsightly yard is an earthly paradise.

In many localities, flowers are to be had for the asking; but if you have no good neighbor from whom you can get flowers and shrubs, for real quality and beauty expend a small sum each year for flowers until you have sufficient flowers to beautify your home. In getting and putting out flowers and shrubs, do not make the mistake of getting too many. Just a few look much better than too many. And, many or few, they must be well cared for to look well.

Put up swings and hammocks in the yard. Most any farmer can afford a good strong rope for a swing. The swing can be put up on one or two strong projecting limbs, or on a stout pole resting in two trees; the higher the better, if the children are large. There should be a few yard seats. These can be made at home by someone handy with tools.

Good walks should be put in where needed, of gravel, boards, brick or cement.—Kansas Farmer.

PRUNING OF ORNAMENTALS.

There are certain well-founded reasons for pruning flowering shrubs and hardy vines. It may increase vigor, just as in the case of a currant bush or a fruit tree. When the branches become crowded and, as a result, weak, a judicious thinning will let in light, prevent physical congestion and restrict the food supply to a smaller number of shoots. The cutting back of the annual growths permits the stronger buds to develop, for it is usually true that those at the very extremity of the branch, when the season's growth is indeterminate, are much weaker than those some little way down the stem. Hence this cutting tends to produce stronger lateral shoots and larger and better flowers. In addition, there is a considerable increase in the amount of the flowering wood. There is a distinct advantage in removing from time to time all dead and decaying and all interfering branches. In these instances the benefits are so obvious and the practice so universal that further comment is unnecessary. Although it is not well understood, it is true that a shrub can be kept in good conditon for a longer period of time than nature would allot if some of the older parts are occasionally removed. This needs to be done only when the plant has reached maturity and should be guided by the relative healthfulness of the different shoots and the need for preserving the natural form. This last need in itself is one of the most legitimate of the reasons for pruning. Careful consideration will always reveal something that may be done to assist nature's lines. Abnormally vigorous growth, straggling shoots, and injured branches may at least be removed.

Here it may be proper to mention the formal shearing of hedge plants. The beauty of such a hedge consists in its thickness and uniformity, and in the denseness of the foliage, and whatever contributes to these results is justifiable. This is quite different from trimming shrubs into shape, getting them into the form of a cone or hemisphere, each exactly like its neighbor.—St. Jo. Fruit Grower.

FLOWER INDUSTRY IN FRANCE.

The Syndicat des Horticulteurs gives the production of flowers in the Nice district in 1909 as 7,550 tons, valued at $5,790,000, the industry employing 18,600 persons. Two special trains transport these flowers daily to Paris, London, Berlin, and St. Petersburg, during the season. The flowers are packed in light willow baskets weighing either 6½ or 11 pounds, and are forwarded to their destination by parcel post. The flowers cultivated for export are chiefly carnations, violets, and anemones, while orange blossoms, tuberoses, and jasmin are most extensively used in the perfume factories at Grasse. The production of flowers being more remunerative than farming is the principal reason for the large imports of dairy and farm products into Nice.

In the flower gardens a man earns about 60 cents a day and a woman 40 cents, and in some cases less. A girl flower picker in the district of Grasse earns 20 to 25 cents a day.—Report of Consul William D. Hunter, Nice.

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INTRODUCTION OF BLASTOPHAGA.

(Continued from Page 659.)

she was at the Gates place many times and tried to find edible figs on the capri tree. She is positive in her statement that they were "full of little black winged ants."

This evidence takes us back to a very early date and is to my mind absolutely conclusive. Sincerely yours,

(Signed) Homer K. Pitman.

This testimony is particularly strong because of the fact that Mrs. Ross moved away from the vicinity of the Gates ranch in January, 1871, and therefore could not possibly be mistaken as to the date when she noticed the fig insects, which must have been in 1869 or 1870, or during both years.

Mr. Louis Adams, the original owner of the Gates ranch and who planted the tree, was found by one of the writers and states that he secured a fig tree as well as his other fruit trees from W. B. West of Stockton. He planted the trees in 1867 and sold the place to Mr. Gates the following year. He did not know about the fig insect and does not remember whether the capri tree carried fruit when set.

The evidence presented briefly above shows beyond the possibility of a reasonable doubt that the Blastophaga has lived in the Gates tree for at least forty years, but it does not clear up the mystery of how the Blastophaga got to the isolated Gates ranch.

It now seems probable that W. B. West, who was a progressive nurseryman and known to be much interested in figs, must have imported cuttings that carried the mamme or winter generation fruit, as such cuttings often do when taken from old trees. One of the writers planted last December in San Francisco cuttings from the Maslin orchard at Loomis with mamme attached. On the first of May following the insects were in good condition and about ready to issue, but the weather becoming warmer the figs dried up and fell off. From this it is evident that the Blastophaga can live on unrooted cuttings for five or six months.

In the spring of 1889, Mr. H. E. Van Deman, then Pomologist of the United States Department of Agriculture, introduced the Blastophaga into this country in this manner without any intention of so doing. It is probable that the insects reached Mr. West in this way and established themselves without his knowledge in the Gates tree before it left the Stockton nursery in 1867.

One of the writers has hunted up quite a number of old capri trees which he believes were, with few exceptions, derived from the same source, namely the nursery of W. B. West of Stockton.

Within four miles of Lathrop, San Joaquin county, are two old capri trees, one on the ranch of Geo. E. Salmon and the other on the adjoining ranch, recently purchased by W. W. Rimby. These trees are very old and that on the Rimby place was about as large as the Gates tree before a large limb and one-third of the trunk was split off by the wind a few years ago.

James Turner, now living near Lathrop, sold the ranch to Edward Cail in 1861. In an interview a few days ago with the widow of Edward Cail, now teaching a district school five miles from Lathrop, she stated to one of the writers that she married Cail and went to live on the ranch in 1885. The tree was large at that time. She distinctly remembers trying to find edible figs on the tree, but that they were full of those little bugs.

Old residents of the locality assert that these trees were planted more than forty years ago. Mrs. McKenzie, widow of a pioneer, with her husband settled on the ranch adjoining the Salmon place in 1864 and says the Rimby tree was planted three or four years after. Mr. Salmon has lived on his place since 1898 and was familiar with it several years previously and is positive that the two trees have carried an over-wintering crop since 1880. Mr. Edward Reynolds, a neighbor, is sure that the trees have carried mamme through the winter for more than twenty years.

In Stockton, Mr. C. W. Logan (corner Oak and Union streets) has seven capri trees from which large quantities of profichi have been taken during the last three years by Smyrna fig growers of the San Joaquin valley. The largest of these is over four feet in circumference two feet from the ground. They were planted many years ago by Dennis Crane, according to Mr. Joice, a neighbor, about thirty-eight years ago. He says that they have always carried an overwintering crop. Matthew Crane, son of Dennis Crane, now living in San Francisco, says his father bought the place in 1865 and the trees were planted between 1866 and 1870. He is positive that they carried a mamme crop as early as 1868.

At Merced on the Dwyer place there is an old capri tree that was planted at least 30 years ago, but not infested until last spring when the insects were sent in some capri figs secured at Ripon by one of the writers. The profichi from this tree, like most caprifigs when not infested by the wasp, are sweet and edible.

Within two to four miles from Ripon, San Joaquin county, are thirty old capri trees growing on the farms of Mr. Watkins, Judge Preuitt, Mrs. Frederick, Fred E. Kincaid, John Riddelle and Frank Hutchinson. Most of these trees were stocked five or six years ago by Geo. C. Roeding and are now producing great quantities of profichi which are purchased by the Smyrna fig growers of the San Joaquin valley. These are very old, some of them with trunks over two feet in diameter and are all of the same stock.

In the vicinity of Milton, Calaveras county, are twelve old capri trees, none of which are infested, with the exception of one on the Rhodes Bros. place which was caprified with caprifigs sent by the writers from the Loomis orchard last spring.

They were planted by Robert Cooper, James Williams and Samuel Hayes, brothers in law, sometime between 1868 and 1870. They are all alike and the same as others from the West nursery at Stockton. They are growing in fields and about old deserted homesteads. The fruit when ripe is sweet and quite palatable, like the profichi of most capri trees, and what escapes the birds is eagerly devoured by stock.

At Vina on the Governor Stanford ranch, are four old capri trees, probably planted in 1881-1882, at the time the cuttings from the Bulletin importation were put out, the governor having had a large number of the cuttings, mostly of the Smyrna type. One of these caprifigs is of the Milco variety. The Blastophaga was established on these trees, as well as on several other capri trees in the county, seven or eight years ago by Mr. W. Herbert Samson of Corning, California. The old Smyrna trees, some of which have trunks two feet in diameter, are producing bountiful crops of luscious figs.

There is one capri tree at San Rafael, Marin county, on a place owned by Geo. D. Shearer, and two at Los Gatos, Santa Clara county, owned by Mr. Boyd. These trees which look to be about 30 years old, were infested with figs sent from Loomis last spring. These and a large number of capri trees in many different localities in California, Arizona and the Hawaiian Islands have been infested with Blastophaga in accordance with the plan of the bureau of plant industry of the United States Department of Agriculture, in order to provide against the possibility of the loss of the insect through frost or other cause, as sometimes happens in the Smyrna fig districts of Asia Minor and Greece.

A careful examination of all these old capri trees and comparison of the fruit shows that with the exception of the San Rafael tree and two or three at the Vina ranch, they are of the same variety, namely, the one which somebody in this state has called the Milco after the late G. N. Milco of Stockton.

It has also been distributed under the name of Endrick, though most of the nurserymen catalogues of 1865 to 1880 describe the Endrich as a white edible fig. Mr. Geo. C. Roeding, who has studied many of these old capri trees, is also of the opinion that they are of the Milco variety, but does not believe that it was imported by Milco, as claimed by some, while it is almost certain that it was imported by W. B. West.

In 1865, according to Dr. Eisen,

W. B. West imported by way of the Isthmus, the overland railroad not having been completed, 22 varieties of figs from the south of Europe. It is reasonable to suppose that the Gates and other old trees were of this importation and came with the figs of the mamme crop attached and that the beneficent insect upon which the whole Smyrna fig industry rests was in this way first introduced into the new world. Mr. Fred M. West of Stockton, who died within the past eighteen months, was from 1861 to 1868, a partner in the nursery business with his brother, W. B. West. In answer to an inquiry of one of the writers, he stated that if "we imported the caprifig tree and the Blastophaga it was purely accidental, as we knew nothing of the tree nor insect, but supposed that we were importing and distributing a choice Smyrna fig."

Had the facts we now bring to light been known thirty-five years ago when there were hundreds of enthusiastic growers of the Bulletin Smyrna fig trees scattered all over the state, there can be little doubt that this country would have ceased to import Smyrna figs twenty years ago and some millions of dollars would have been paid to the California growers instead of being sent to Turkey.

Had the fact been discovered fifteen years ago, when strenuous efforts were being made to introduce the Blastophaga and when the sterility of the Roeding and other Smyrna fig orchards had been rightly demonstrated to be due to the absence of this insect, there can be little doubt that a shrewd operator could have disposed of the Gates trees and its swarms of beneficent insects for a sum well up in four figures.

As further evidence of the early introduction of the Blastophaga we may mention a very intelligent and well-known lady of Stockton, widow of the late J. D. Peters, said to one of the writers that she was one day in her husband's office when G. N. Milco came in and showed her and Mr. Peters a number of figs containing "little flies," without which Milco said Smyrna figs could not be grown. Being asked if she could give the date of this incident, she replied she could not say exactly, but that it was one or two years before Mr. Peters built his new building on Channel street. The building bears the date 1888 cut in the stone coping. This definitely shows the existence of the Blastophaga in this state in 1886 or 1887.

After all, the chief lesson to be learned from this remarkable history is the necessity of a scientific understanding and appreciation of facts to render them of any practical value.

Two practical questions are being given attention: First, the precocious bearing of the Gates capri tree, if it is maintained in other places, is likely to render it a valuable variety to set out in young Smyrna orchards, for most varieties of caprifigs do not carry the Blastophaga all the year around when they are young. Mr. Samuel Gates has presented a quantity of cuttings to the Bureau of Plant Industry, which with other valuable caprifigs will be sent free to anyone who will plant three seedling figs for each cutting received.

The second question is whether the Blastophaga in the Gates and other of the old trees are in any way different from those brought from Algeria in 1899 and in particular whether the Gates tree and any other tree that may have been infested from it are free from the messmate Philotrypesis, which infest most of the capri figs of the Old World. These harmful insects did not get established when the Algerian Blastophaga were introduced and from careful examination of the fruit of hundreds of capri trees, it is confidently believed that the Philotrypesis has not obtained lodgment in this state. This is a matter for congratulation, for in Asia Minor the fig wasps are crowded out to such an extent that the Smyrna fig growers are obliged to use a much greater number of caprifigs with which to fertilize their trees than do the California growers. Fig growers are cautioned not to import caprifigs from oriental fig districts for the risk of introducing this harmful companion of the Blastophaga is too great.

PLAIN FACTS OF FIG WASP.

(Continued from Page 659.)

who forwarded me samples of the spring crop, saying the tree would never carry its figs. I informed him it was a caprifig, and forwarded figs colonized with Blastophaga, and ever since this time it has retained the insect.

Now for the last prop. It just happens that the Logan trees which are located in the city of Stockton, and not over a mile away from W. B. West's nursery, never had the Blastophaga until the insects for colonizing his figs, were obtained from me by Mr. Chas. A. Chambers, business manager of the Fresno Nursery Co. The correspondence between Mr. Chas. A. Chambers and Mr. C. W. Logan dates from March 17, 1908, in which Mr. Logan refers to a number of trees growing on his place in town as follows: "I have about a dozen old fig trees, they are loaded each year with white figs which never mature. They grow large, and about when they should ripen, drop off, so I suspect that they are in need of the Blastophaga." Two days after this letter was written samples of the figs were forwarded by Mr. Logan to Mr. Chambers, who brought them to my office for identification. On examining the figs I pronounced them capris and at Mr. Chambers' request, supplied him with a number of mamme figs which were forwarded to Mr. Logan.

For the last two years I have bought from Mr. Logan all the mamme and profichi figs which could be spared from these trees. Mr. Logan informed me that the trees never retained their fruits until he secured the infested caprifigs from Mr. Chambers.

I want to say further that the caprifigs in the Stanford ranch were colonized by wasps forwarded by me to Mr. W. Herbert Samson. That I personally established the insect in the caprifigs at Niles, also in the trees on the Van Lennep place at Auburn. That the wasps were introduced into the Maslin orchard at Loomis, now the U. S. Government Experimental Station, from a consignment forwarded by me to Mr. Mazal, who had the place rented at that time. I can mention numerous other places to which I forwarded caprifigs without charge, and in many cases where at my own expense I personally conveyed the figs and gave instructions how to care for them.

As to the Van Deman importation, I wish to say that none of the caprifigs he received were ever forwarded to California. I have a letter from him later, in which he expresses his regret in not knowing that I was an interested party.

Another strange feature in connection with the Gates tree, is that Mr. Watkins and others at Ripon, who have trees which are not much over five miles from the Gates tree, showed no signs of infestation until colonies of wasps were actually placed in these trees.

How different has been my own experience. The year following the introduction of the insect on my place, it found its way into Roeding's Capri No. 3, growing on the vineyard of Mr. F. M. Roessler, five miles northwest of my place. I was not aware the tree was growing there, and my attention was first drawn to it by samples of figs brought to my office in the month of March.

Is it not a striking coincidence that the Gates tree should also have escaped having the parasite "Philotrypesis" introduced into its figs?

The version of the early settlers on the Gates ranch reminds me very forcibly of an experience of mine while visiting the fig bazaar in Aidin, Asia Minor, in June, 1901. I opened a caprifig which was full of Blastophaga as well as its enemy the Philotrypesis. I showed the fig to an old Turk, who had been engaged in the growing of figs all his life. He informed me with much gusto that the parasite was a most wonderful and valuable worm, in fact, the best of all.

Poor Blastophaga, you for whom I worked and strived; is it possible that the ridicule I endured, the care of a sixty-acre fig orchard for a period of fourteen years without any returns, the sending of a special agent to Arizona; the effort to secure one of your tribe from Mexico, through the recognized entomological explorer, Mr. Koeble; the plowing and harrowing I gave the U. S. Department of Agriculture to awaken an interest in this subject; the investigations by Dr. L. O. Howard and his able assistant, Mr. A. E. Schwartz in fully elucidating the most complicated entomological and botanical problem of the day; was all for naught? Is it possible as a poor despised worm, ant and fly you have resided in Stanislaus county these many years? Oh! that I could believe it.

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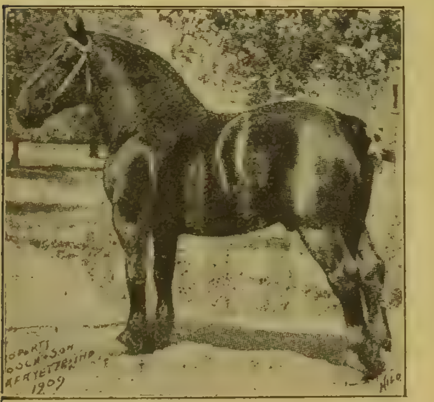

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SWISS GOATS AT SAN LUIS OBISPO COUNTY FAIR.

By R. M. Cartwright, San Luis Obispo.

At the recent county fair held in San Luis Obispo, District Number 16, it was interesting and encouraging to note the comments passed by the Swiss people on the exhibit of Swiss goats (both grades and imported) that were the property of Miss B. A. R. Stocker and R. M. Cartwright. The usefulness of the "cow diminutive" and the pleasure derived from handling her was a constant topic. It is common experience that a yield of three to five quarts of milk a day is a very ordinary record for these little cows, at a maximum cost of considerably less than five cents a day. And when it is considered that they weigh less than one hundred pounds, it is a wonder how they do it. For a constant supply of unpolluted milk the goat takes the lead regardless of economy wherein she surpasses.

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The doe most admired by those Swiss people coming from the southern borderline of Switzerland was "Zeta," a beautiful black and white spotted Alpine. She was said to be the pure dairy stock—the perfect dairy type. She is about twenty months old and gave when fresh at her first kidding nearly three quarts in twenty-four hours, and this yield in the regular order of events will increase until her sixth or seventh year. Next kidding we have reason to expect better than a gallon a day. She will bring kids by Andreas Hofer.

Representative of the Toggenburgers was a doe and her pair of eight months old kids. One of these, the buck, at six months old, measured twenty-six inches high at the withers and was of relative proportion in all parts. The dam is one-half Toggenburger and gave three quarts at this, her first kidding. Great things are expected of the kids. They are all three well marked and have that shade of brown so difficult to describe but so easy to remember if once seen. It is referred to as "dark drab," "light brown," and "mouse" color, and as we know, none of these do it justice. As a breed they are very beautiful, probably the best known, and because of their greater numbers will continue the most popular of the Swiss breeds in California for some time to come.

The Saanen stud buck, "Andreas Hofer," was the cause of more constant wonder and continual consternation among the ladies and children who thought that he should be petted, than all other exhibits combined. It was even questioned by some if he were a goat. And Swiss men informed us that he was an exceptionally good representative of his breed. The Germans purchase them to improve their own stock. And well they may, when we realize that Andreas Hofer in this state has achieved results equalled by no other buck of any breed—the production of four and five-quart does by Angora dams! He is a giant, vigorous and prepotent. He can lift his nose more than eight feet from where his hind feet rest. He stands thirty-eight inches high at the withers. Fifty dollars will be paid for the best five-months-old kid that he brings this breeding season. They will be judged by photos and measurements of his kids from all over the state.

As a matter of investment the goat stands unrivalled save by the promises of various prospectuses. A man in Oakland paid forty dollars for a doe. He rents her by the month at ten dollars a month. The milking period runs close to ten months. What a return for such an investment!

During the fair, application was made time and again for does in profit. The babes we saw, and it was to our sorrow that we could not supply them. The goat's milk is so like mother's milk that it requires little modification. It is even told how in Switzerland the doe is given the babe in charge and so trained that hearing the infant's hungry cry she will come running and allow the babe to take the milk directly from the teats. What an idea for Rooseveltian inclined families!

Does in profit are not for sale. But when they are offered they find a ready and quick sale. A doe kid, bred to a good buck, is the best investment, bringing milk for the folks and kids for profit. Kids sell for twenty dollars up to say fifty dollars for grade kids—higher for thoroughbreds. They will bring an abundance of milk at a cost of a great deal less than five cents per day for feed—all purchased.

Swiss goat's milk shows a test of from three and five-tenths to four and five-tenths per cent butter fat. Angoras and Swiss-Angora crosses run one to three per cent higher. The curd is very tender when raw or when prepared as delicious schmierkase. For these reasons physicians are recommending it more and more for infants, invalids, and as a domestic milk supply. Since tuberculosis is very rare among them they are even more urgently recommended.

The Swiss goats are practically the only imported goats of the milch breed to be had here now. Rumors have come to us of a very superior goat on the Azores Islands, whose yield often exceeds eight quarts daily. The quarantine law of the United States forbids importation from this point or any other in Continental Europe, and we feel serevely handicapped for lack of good milch stock. The time is eagerly anticipated when importations can be made. The State University is cognizant of the increasing demand for goats as well as the source of the deep interest evidenced by the many inquiries forwarded to other goat enthusiasts throughout the state.

The sooner the authorities, either state or national, get for us the power of bringing animals from these points even after investigation however searching the sooner will the time approach when in-breeding and cross-breeding will be and can profitably be discontinued. Mates for our best stock are wellnigh impossible to get. Some of us will gladly be "counted in" for our share of making such an importation which will give the milch goat breeding industry a boost in California.

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AN ITALIAN PROVERB.

The Italians have a proverb which, translated into English, is as follows: "Wife and stock, select at home." Like many other proverbs, it presents only part of the truth, and is not of universal application, says an editorial in Wallace's Farmer. There is great good sense in the proverb applied to the choice of a wife; for if two are to make the greater part of the journey of life together, it is of the utmost importance that they should know each other before making a hard and fast engagement; and they are more likely to know each other if they have the opportunity which neighborhood association affords. In forming marriage engagements we are more likely to follow the ideal than the actual, and there is often disillusionment (very serious and sometimes humiliating) when folks who marry without intimate knowledge of each other are obliged to put up with the actual and put the ideal away as a beautiful but unrealized dream.

On the other hand, no young man should feel obliged to take choice of what the neighborhood offers, unless the neighborhood is of a high character; that is, provided the young man has high ideals; and vice versa.

Neither must the maxim to select stock at home be taken in all literalness. The word imported has a wonderful charm for people who have not studied live stock conditions in other countries. The assumption that unless an animal is of superior quality it would not have been imported is often without foundation. On one of our visits to Scotland, we heard a description given to a certain class of horses, for which we could not understand the reason. They said: "This is an American horse." We asked, "What do you mean by an American horse?" The answer was: "We mean a horse that is good enough to ship to America, but not good enough for a dray horse in Glasgow." This was long ago; but it reminded us forcibly of a number of imported horses that we had seen, which answered quite perfectly this description. They were sent abroad because they were not good enough to be kept at home.

The United States has now reached a point when it should be able to produce as good live stock as can be produced in any other country on the face of the earth; not in every locality, but in some localities especially fitted for their production. We are under great obligations, however, to other nations for imported stock. We owe a great debt to England, to Holland and to France; but we have now reached a point where nothing should be accepted that is not of unquestionable superiority and undoubted lineage. In other words, we have reached a point when the utmost encouragement should be given to our home breeders, and the term "imported" should not be regarded, as in the past, as guarantee of superior excellence. The animal itself must prove that excellence, not by a certificate of importation, but by standing the tests which stockmen apply, or at least should apply, to all classes of animals, whether imported or of home growth.

In purchasing live stock, whether at home or abroad, we should keep in mind both environments. The animal is largely the creature of environment. There were breeds before there were breeders; and the breeders have simply perfected that which the environment first created. We must not expect to maintain the quality of stock of any kind unless we furnish them an environment, either natural or artificial, that will maintain and if possible improve the quality.

We have seen men vainly trying to make like produce like, after taking an animal from a superior environment to an inferior one; and we have never yet seen it succeed. We can safely remove stock from an inferior environment to a superior, and improve them until they measure up to the environment. Part of this environment is natural: soil, climate, superior grasses. Part of it is artificial: the care, the shelter, the indescribable something which we call skill or faculty on the part of the breeder—the judgment which enables one man to mate with surpassing skill, and the lack of judgment which frequently causes one man to fail where another in a precisely similar outward environment succeeds.

There is something in the really first-class breeder that approaches genius, something which can not be adequately described. If this genius continues from generation to generation, which it does not always nor often do, then we have a live stock farm from which a man can safely buy at apparently long prices. It is surprising, the genius of some of England's great men and great families, that have given us the best in some of our breeds of cattle. It is the lack of this genius in many cases that causes cattle to be sold more on reputation than on merit.

Therefore, give heed to the Italian proverb and follow it, but only so far as it is practicable and likely to lead to the best results. We might sum it all up by saying: Whether in wife or live stock, select at home if you can do as well there as away from home; but in any case know what you are getting, so far as that is possible.

AUTOMOBILE VS. HORSE.

I wish to take exceptions to the first cost claim of the Maxwell company of "Automobile vs. Horse." They place the ocst of horse, buggy and harness at $375.00, which I think excessive. The average distance driven per day, 33 miles. Now a good average driving horse should walk four miles per hour, or 32 miles in eight hours.

They place hay at one cent per pound, which is fair, but they put straw 1½ cents per pound, which is excessive, as I see straw quoted in your market report, San Francisco, at 40 to 50 cents per hundred pounds. You also quote hay, Los Angeles, at $10 to $14, and oats at $1.80. So their feed bill is excessive all around, while the performance might be covered with any old skate.—Constant Reader, Redlands.

If the horse has defective feet keep them carefully trained and shod, if necessary. The soft hoof should be shod and reshod every six or eight weks in winter where the ground is frozen, and at all times of the year where the roads are rocked or graveled. By keeping the horse with poor feet properly shod it will do good service without loss of time. It is best, however, to breed for good feet.

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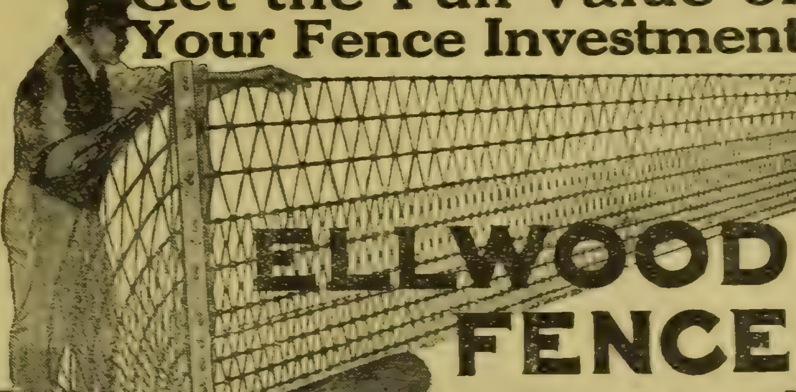

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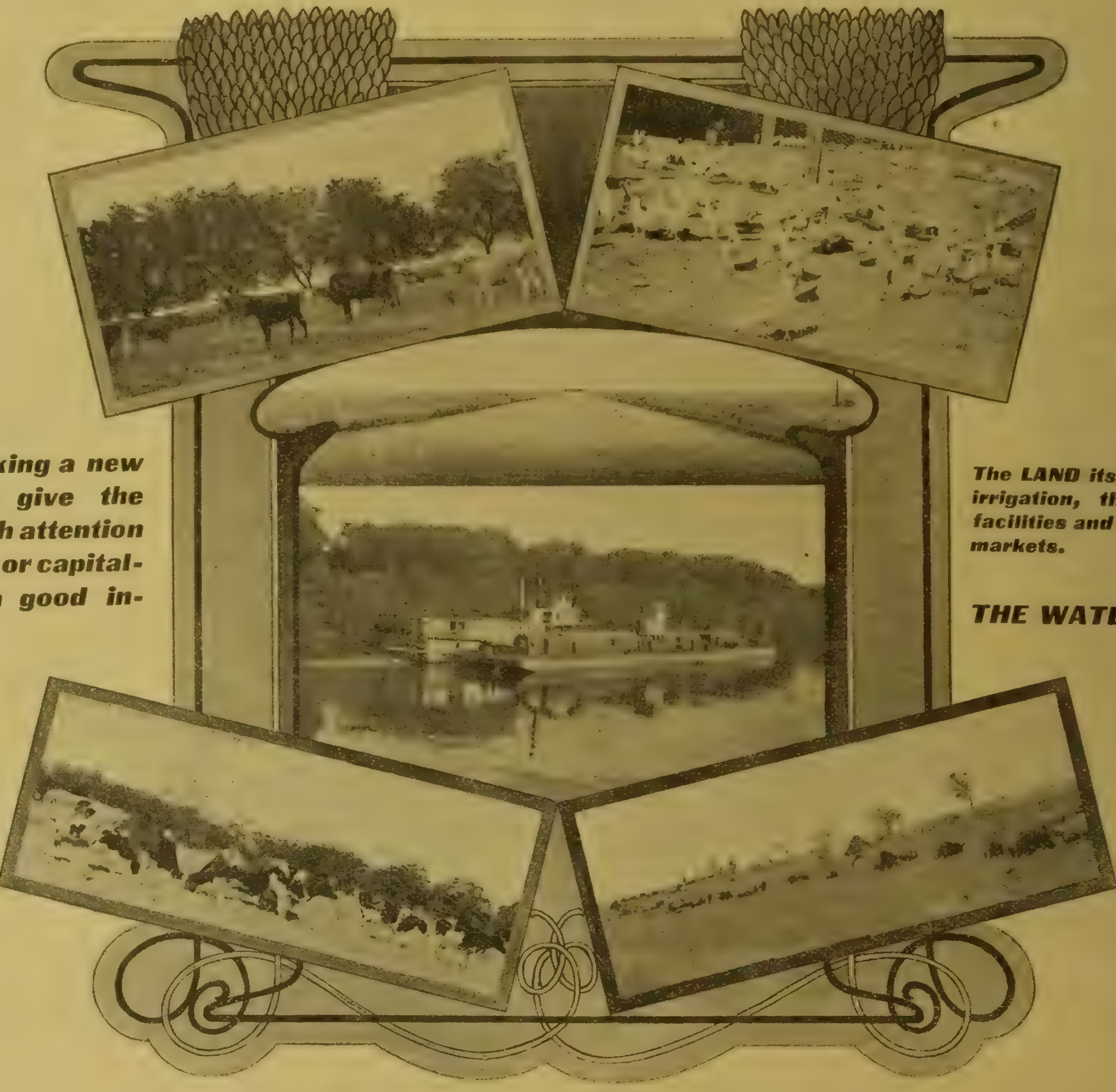

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Rich as the Valley of the Nile

A Section of Orchard and Field Crops, Dairying, General Live Stock and Poultry

Time was when the Sacramento Valley was dubbed the Granary of the West. Its great productions were chronicled and the methods of harvesting and other field operations were on such a gigantic scale as to throw about it a halo, and it has been written of and illustrated because of the princely magnitude of its farming. The fall was coming, however, during all this glory because the continuous cropping to one cereal without rotation led to inevitable decrease in production, and ultimately many acres were allowed to lie idle for years. Meantime the other sections of the state had felt the impetus and received the benefits coming from the more intensive fruit culture, and occasional favored spots where the great landholders would release some of their holdings in the Sacramento Valley showed most progressive communities. The greater wealth brought to the owners by this more intensive cultivation has gradually led to the extension of fruit farms. This necessitated cutting up all the big ranches, the bringing in of new blood, and in many cases the construction of canals for carrying water to the lands.

PEACHES ON THE RANCH OF W. F. BURT.

The holding of these great ranches by one man or one corporation has to a certain extent been to the detriment of this great valley. This is being more and more realized, and especially is capital beginning to see the great possibilities of these rich lands when water is put upon them. General Chipman in his address at the State Fruit Growers Association at Stockton made emphatic the gain in population shown by the last census brought about in counties where irrigation has been developed to its greatest. Some counties have shown an actual decline in population. Of course it must be admitted that these are the mining counties, but others, large at one time in the agriculture of the state, have stood almost without increase. As an example of decreasing population, we may cite Alpine, a mining county, losing almost half of its population during the last ten years. Amador, a mining county, decreased from 11,000 to 9,000. Del Norte showed an increase of only nine people in the ten years. Eldorado, another mining county, showed a decrease from 8986 to 7492. It is to be hoped, however, that the fruit growing interests which are beginning to predominate in that county, will bring it back to its former prosperity, for horticulture brings permanent prosperity while that from mining is only temporary.

To come down into the Sacramento Valley proper, Glenn county in 1900 showed a population of 3150; in 1910, 7171. Colusa, its next door neighbor, did not show so large an increase, having 7365 in 1900 and 7732 in 1910. We think it is safe to say that far greater irrigation extension was made in Glenn than in Colusa. We call attention to these two counties in particular for the sake of making a bit of prophecy. We are going to assume the truth of General Chipman's conclusion that population and production follow irrigation, and prophesy for these counties a doubling of population during the next decade—this largely because of one great system of irrigation. Ten years ago great stretches of land in these counties were held in grain ranches. The great Glenn Ranch, largely in Glenn county, alone being held by one man. This ranch, together with other thousands of acres, has been purchased by eastern capitalists, generally known as the Pittsburg Syndicate, and these people have carried the waters of the Sacramento river for many miles and distributed them over these two counties. 125,000 acres are being covered and the concrete headgates and other methods of distribution of the water are so permanently established that one of the best irrigating systems in the state of California is the result.

These lands extend from the banks of the Sacramento river on the east well up to the Coast Range on the west and from several miles north of Willows to a point south of Williams. Almost every variety of soil from a heavy black adobe to sandy loam of the foothills may be had.

One point which makes these lands very attractive to the homemaker is that they offer a good investment. The price at which acreage is held, $125, including water right, cannot help but impress upon one who has noted the improvements which have come with irrigation the fact that they will in the future show great increase in real valuation. We believe this is a wise move on the part of these great colonies. Too many times in the history of development propositions have the founders put prices upon the lands which have yielded to them practically all of the profits for years to come. The better class lands in the Sacramento Valley covered with water at $125 per acre certainly look good to the real homemaker. It is a great satisfaction to have a home place which is not only affording an annual income for the support of the family, and being increased in value by improvements, but which also makes the owner feel that it is a savings bank returning better than a four per cent interest by this real increase in valuation.

INTENSIVE SACRAMENTO VALLEY FARMING.

As we remarked before, there has been much complaint because of the selfishness of the holders of these great ranches in keeping them intact and refusing the small farmer an opportunity in the valley. Now this great syndicate is throwing open thousands of acres, as are other companies in the Sacramento Valley. Development now is up to the home maker. Speculation here may look attractive, but the speculator who buys to hold until the actual home maker offers a higher price is not the man desired on those lands.

Returning again to a general consideration of the valley, let us refer to the fact that if the states of Maine, New Jersey, and Connecticut were taken up and bodily laid down in the Sacramento Valley, there would still be a few nooks and corners for potato patches. We make this comparison, for in speaking of the hundreds of square miles of wheat still in existence, the idea might obtain with those who are unacquainted with the valley that it is practically all grain land with but little attention given to fruits. But with these great grain fields there are many fruit producing sections. As evidence of this let us mention that the annual output of the valley in fresh deciduous fruits mounts well up towards $7.500.000. In citrus fruits we cannot give exact figures as to financial returns, but in Butte county on the eastern edge of the valley more than 400 cars of the very finest oranges have been shipped to eastern markets this year. Butte county is also boasting that she will soon be the greatest olive producing section in the world. In dried fruits the production is also great. Many canneries run full handed in season. Almonds are also one of the profit bringers in the central part of the valley.

Dairy products bring millions to the valley and in this we believe the lands described in Glenn and Colusa counties will excel. The quantity of water being brought to the lands, together with the peculiar adaptability of the soil, will make alfalfa supreme. One farm northeast of Willows has just been made ready for irrigation of alfalfa. Every one of the 160 acres was diked and ready for the seed a few months ago when the writer had the pleasure of a ride over the great ranch. We may refer to that event because of the bearing it has upon the photographs shown upon this page. These photographs were all taken upon one small ranch of only seven acres, but it has the distinction of having won the prize of one of the finest registered Holstein cows to be secured in the East. This is one evidence of the liberal management of the great concern which has had to do with developing these lands. The owner of this place is Mr. W. F. Burt, and regarding it we may be pardoned for referring to a bit of information which we gave at the time of the winning of the prize: "This place is directly under the levees of the Sacramento and on exceedingly fine, rich land. It is a good sample of intensive farming accomplished by the farmer's own labor and that of his family. Besides a living for his family Mr. Burt has banked over $1700 during the past year. Cows and pigs, fruit trees, garden truck, small fruits, poultry and even several stands of bees in a stray corner, indicate that Mr. Burt makes the most of every item on the ranch. Besides the place is well kept and neat."

GRAPES ON BURT'S PRIZE WINNING RANCH.

The prize which was offered by the Sacramento Valley Irrigation Company was secured by this ranch because of the intensive cultivation which Mr. Burt had given and the general care of the place.

Established 1889. Twenty-second Year.

California Cultivator

A Journal of Horticulture and Agriculture

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December 29, 1910

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Ring in the New

Next Sunday will mark another milestone in the lives of all of us. The new year will be born, and the old, with its successes and mistakes, will be history. A casting over the past and resolutions for the future will be in order. The past need take but little of our time, the future more. The "new year resolution" is the butt of many a joke; it is broken so often as to even be considered obsolete. But there is that in such a day which invites retrospection, and the latent resolution to do better is liable to receive new life. Encourage it.

In agricultural matters, as in intellectual and spiritual life, there is an infinity of possibility. The stone wall with its "No farther" will never be encountered. The new year offers a fresh start to each. Will our farm or orchard prove more profitable or less so than last year? Weather conditions and market conditions may combine and defeat in a measure our best plans, but let us so conduct our affairs that so far as our effort is concerned conditions will be right for success.

May that success be complete for every one of the Cultivator readers, and may hapiness be granted every day of the new year.

Bumper Orange Crop

A regular annual feature, and a most valuable one, of the Riverside Daily Press is its annual estimate of the orange crop. The estimate is carefully made and given by districts in the state. After giving this estimate the Press concludes as to this year's output: "This crop should bring the orange and lemon growers of California eighteen or twenty million dollars."

This estimate gives to the Riverside district 4,650 cars. Redlands comes second with 4,600. Pomona is third with 4,000, and so on, with valuable figures as to the various other citrus-producing districts of Southern California. The estimate for Tulare county is 2,380 cars. This is hardly an estimate, because practically that number of oranges have already been shipped and the crop cleaned up. In Butte county the situation is similar, with a total of 400 cars. The Sacramento-Placer district shows 150 cars. The grand total for the state is 37,380 cars of oranges.

In lemons, San Diego county leads with 1,250 cars. Other districts bring up the total for the present year to 6,800 carloads.

This will make by long odds the greatest citrus output the state has ever had, and with the quality fully equal to if not finer than any former season, the outlook is good for great returns.

The Hawaiian Islands are making experiments in the growing of cotton as a rotating crop with sugar cane; also in growing it in sections of insufficient water. It seems that the long-fibered Sea Island and Caravonica cottons are grown and as perennials. The plants are widely spaced and vigorously pruned every year. The prunings of the more desirable plants are then used for starting other plants, for budding or grafting. In this way the increase is rapid, the more desirable plants are grown and quick results secured. Besides the season can be controlled so as to meet the labor situation more satisfactorily. It is not yet known how long cotton can be profitably grown as a perennial.

Farm Papers in Schools

Instructor Morgan who has charge of the agricultural work in the Stockton High School, is one of the most enthusiastic believers in agricultural teaching in the state. Mr. Morgan began his work in the Imperial High School and made a record there which called attention to his abilities and Stockton began its agricultural department under his leadership. As yet the Stockton schools do not have a farm for permanent agricultural experimentation, as does Los Angeles, Oxnard and some others, but it is expected that this will be secured in the near future. One feature of the work in the Stockton schools is that the agricultural department is supplied with a reading table on which are copies of all the agricultural papers of the Coast. Mr. Morgan informs us that these papers receive a great deal of attention even on the part of students living in the city and not directly interested in farm life. In a sense these papers bring the young people closer to the soil than do the text books which they are studying.

Work of particular interest to be taken up after the holiday vacation will have to do with horticulture and viticulture. Varieties best suited to valley conditions, especially those immediately surrounding Stockton, methods of growing these varieties by propagation, budding, grafting and cuttings will be taught, not only taught, but the students will be expected to do the work under competent instructors.

Cereal Production

The United States total production of corn in 1910 was 3,125,713,000 bushels. This is far greater than that of 1909 which was 2,772,376,000, but the price this year is almost ten cents per bushel lower than last year, or an average the country over of 48.8 cents, which will bring to the farmers something over $100,000,000 less than last year. The wheat production on the other hand was lower this year than last, being 695,443,000 as against 737,189,000 bushels. The price like that of corn is about ten cents per bushel lower than last year. Barley shows a slightly decreased production, being 162,227,000 bushels this year as against 170,284,000 last year, but the price is two cents per bushel higher.

It may be of interest to add that the value of certain crops of cereals, potatoes, hay and tobacco aggregated on December 1st, 1910, $3,735,464,000 as against $3,971,426,000 preceding year same date, making the financial returns slightly less this year, brought about by prices averaging 8.5 per cent lower than last year.

Conserve our Forests

We imagine it is a little early to remind irrigators, lumber people and others interested in the conservation of watersheds and timber of California of the fearful losses which occurred last summer through forest fires. This is presumed to be the rainy season, hence there is little or no danger from these fires. In the minds of many, the proper time to discuss methods of prevention of forest fires is when the trees are burning. The evidence of loss is then before our eyes and its consideration is forced upon us, but unfortunately like the Irishman's roof, it is then impossible to make repairs. If the situation were given attention at this time of the year, there is more probability of accomplishing results than by summer discussion. As a slight reminder, let us mention that one fire in the forests of Montana, Northern Idaho and Eastern Oregon last summer destroyed over 6,000,000 board feet. The area burned was over one and one-quarter million acres. In one comparatively small section near Coeur d'Alene, Idaho, 450,000 acres were burned over. Other sections, many of them included in national forests, suffered proportionate losses. Such disasters should give impulse to methods of prevention which we feel are fully as important to the national welfare as is the national defense on which millions of money is spent.

Wool Growers Protection

The wool growers who will convene in Portland on January 4th say that they propose to prevent if possible the next Congress making a "jig-saw puzzle out of Schedule K of the tariff law." On this point the call for the convention states:

"How to prevent ruinous tinkering is the subject of greatest interest to the wool growers who will attend the convention. They believe the producer has always had the worst of it because manufacturers of woolens have great wealth and influence, while the growers have always faced a long-continued effort to cut down their share of the profits of the business. Some concerted action will probably be taken at the coming convention to prevent, if possible, the disturbance of the wool tariff to a ruinous extent."

Congratulations are due Florida for the organization of its Citrus Exchange. We note that it is already taking the advance steps of advertising Florida fruits in the eastern fruit trade papers. The advertisements are large and attractively gotten up, giving names of various dealers who can supply the fruit of the Florida Citrus Exchange. The word "Florida" appears in very large black letters and through the center of the word runs a mortise carrying the words "Citrus Exchange." Underneath is printed, "You'll want more." The exchange in California has been the life of the citrus industry. The Florida offspring has fair promise of being equally as successful.

The fight for parcels post is, if anything, waxing hotter and its opponents are more than ever shouting over the fact that the department is at present a losing proposition and urging that extension of business will only result in greater loss. If this be true, it is time for a change in the management of the postoffice. It is a strange situation when politicians will use their own inefficiency as an argument for continuation of poor service. Parcels post is coming, but the old order of things dies hard.

The Dry Farming Congress Bulletin for December is issued in book form containing 288 pages. It has list of the officers of the International Dry Farming Congress for 1911, together with constitutions and almost the entire proceedings of the Dry Farming Congress held at Spokane last October. This is sent to all members of the association or may be purchased of John T. Burns, Secretary, Colorado Springs.

A selling agency for the apple industry of the Northwest is being proposed by the president of the Oregon State Horticultural Society. It is proposed to form a company of sufficient capital to handle all the apples of Oregon, Washington and Idaho.

Agricultural News Notes of the Pacific Coast

Northern California

A colony project is under way at Marceuse, Sutter county.

Chico farmers are petitioning for summer vacation of schools to be extended.

Fifteen thousand acres of the famous Bidwell ranch, near Chico, is being subdivided.

An apple expert from Washington has predicted a great future for apple lands of Butte county.

Water rights and a reservoir site have been secured to cover 65,000 acres of land near Corning.

Chinamen along the river in Sutter county have combined and are holding beans for higher prices.

Seventeen hundred acres of the Hagrin ranch, near Sacramento, is being subdivided for truck farming.

Sacramento county reports 60,000 young bearing orange trees, principally located at Orangevale and Fairoaks.

The exhibits of fruit made by Chico at the National Horticultural Congress secured five first and two second prizes.

A body of about 400 acres of land near Corning has been purchased and will be used to grow garden truck for northern trade.

A forty-acre tract has been donated by a resident of Montague, Siskiyou county, to the University of California for a demonstration farm.

The High School of Corning is gathering together an agricultural library, which will be circulated amongst the farmers of the neighborhood.

The finest lot of beef cattle ever shipped from Yolo county is reported to have gone out last week, when eighty-six Shorthorn steers were sent to Oakland.

A number of taxpayers of a drainage district near Gridley have petitioned the board of supervisors to construct a system of lateral drainage canals.

A eucalyptus planting concern of Solano county, which is being managed by a promoter who is reported as drawing $24,000 a year salary, is being investigated.

Humboldt county creameries paid on first of the month's delivery as follows: Capital, 40 cents; Central, 40½ cents; Libby, McNeil & Libby, 39¼ cents; Grizzly Bluff, 39¾ cents; Swift & Co., 39¾ cents.

The Butte County Citrus Association is gathering an exhibit of citrus fruits and of olives for an exhibit at the citrus fair in Sacramento in February, at the time of the meeting of the Western Fruit Jobbers' Association.

Hop growers of Sonoma county are selling rapidly at about 14 cents. It is reported that over 5,000 bales have changed hands in the state within the past few days. Less than 8,000 bales remain in growers' hands.

Members of the Live Oak Almond Growers' Association, Yuba City, Sutter county, recently met and elected officers for the coming year: A. E. Boynton, president; J. D. Spilman, vice-president; John Alexander, secretary; A. W. Cutts, delegate to the State Exchange.

Central California

Lodi, San Joaquin county, is still gathering red raspberries.

Interest in California prunes is increasing and the market is very firm.

A good roads association has been organized by Tulare county good roads boosters.

The outlook for Valencias was never better than at present in Tulare county.

Orange shipments made from Tulare county are bringing better returns than those of last year.

Lemoore dairies are being given a thorough cleaning under the direction of state dairy inspectors.

The Fresno Canal and Irrigation Company is building a wasteway from the Herndon canal to the San Joaquin river.

A Japanese potato grower in San Joaquin county is reported to have cleared over $200,000 on his this year's crop.

Pajaro Valley's rain last week aggregated about a fourth of an inch, which makes the total for the season 3.26 inches.

The Tulare County Humane Society is reported to be on the trail of those who follow the practice of picking live turkeys.

Over 500,000 head of cattle are being fattened on sugar beet pulp in the Alisal section, near the Spreckels sugar factory.

Cattle men of the valley are looking for range for their stock, which has been greatly restricted by the continued drouth.

A largely attended meeting was held last week at Newman, Stanislaus county, to discuss the formation of an irrigation district.

The Tulare Co-operative Creamery Company has made arrangements for enlarging its factory so as to handle evaporated dairy products.

The district or county fair plan to receive aid from the state has been endorsed by many fair associations of the San Joaquin Valley.

Porterville orange growers sold their holiday fruit so close that the local market was short of fruit and imported oranges from the southern part of the state.

It is reported that 350,000 sacks of potatoes will cover all the stocks now in this state, which necessitates importation of potatoes from the East before the next crop can be marketed.

San Joaquin county potato growers are pleased with present prices, which are the highest of the season. It is stated that California uses 12,000 sacks of potatoes every day in the year.

A company has been formed at Turlock, Stanislaus county, for the purpose of raising and shipping cantaloupes during the coming season. It is estimated that several hundred acres will be planted.

A car of late Emperors from Dinuba recently sold in New York city for $2,540. The prices at the closing of the season have proven much more satisfactory than the earlier shipments.

Southern California

Beet seed planting has begun in Norwalk, Los Angeles county.

One ranch company at San Jacinto has just finished seeding 4,000 acres of grain.

A Riverside rancher claims $10 from each of his tomato vines during the past season.

Over a half million in disbursements are to be made in Imperial valley from cotton sales of the season.

Southern California has forwarded the greatest amount of oranges ever sent out to the holiday trade.

The California Vegetable Union packing house at Olive is being moved to Placentia, Orange county.

Nearly a thousand head of cattle were received in one day recently at the Chino Sugar Factory for fattening on beet pulp.

Experts in agriculture in Japan are in Imperial Valley, learning up-to-date methods in irrigation and general agricultural practice.

County Horticultural Commissioner Bishop of Orange county is inaugurating a campaign against mealy bug in Los Angeles county.

Articles of incorporation of the Holly Sugar Company have been filed with the county clerk of Orange county, with capital stock of $5,500,000.

Highland, San Bernardino county, reports an average of fourteen cars of oranges daily for December, which is the highest ever for that month.

A 3,000-acre ranch near Tehachapi, a liberal portion of which is good alfalfa land, has been secured by dairymen, who will establish one of the largest dairies in Southern California.

Orange-packing houses at Redlands are using machines for the rounding of edges of orange packing boxes, so as to lessen the danger of injury when the box is put under the press.

The Hermosa Water Company supplying water to lands about Cucamonga, has decided to extend its tunnel in Deer Creek canyon and secure more water is possible.

Citrus growers in San Fernando Valley have installed automatic thermometers which in case of possible frost sound the alarm at the central telephone station when the operator gives alarm to the growers.

Irrigators in the Antelope Valley are concerned over the effort of the city of Pasadena to secure the waters of Big Rock Creek and they promise a strenuous fight before these waters are allowed to be taken from the valley.

Potato growers at San Bernardino have been troubled this year with a moth which lays eggs on potatoes which may be exposed on the surface of the ground. On the hatching of the egg the small worm eats its way into the potato.

Riverside citrus growers are endeavoring to secure more liberal appropriation for the citrus experiment station and hope the legislature will appropriate enough to purchase the lands which the state is now leasing for station grounds.

The Coast

Blackleg is killing many range cattle at Wastuchna, Washington.

Spokane reports half of the year's output of wheat still held by the growers.

Winter wheat in Eastern Washington is reported to be in the very best of condition.

Spokane reports the present season's supply of hops to be practically all out of the growers' hands.

Contract has been let for Colorado river protection work in the form of levees below Yuma, Arizona.

Seattle, Washington, markets report shortage of first-class apples, which are ruling remarkably high.

Land supposed to be private holdings near Walla Walla, Washington, has been filed on by squatters.

Irrigation plants have been installed at Beverly, Washington, which will lift water for 1,400 acres of land.

Spokane fruit growers are discussing a movement to secure free trade on American-produced fruits to Canada.

Reports from several Coast sections indicate that Christmas turkeys sold decidedly lower than at Thanksgiving.

The cattle industry of Pima county, Arizona, brought to that county approximately $700,000 during the past year.

With the constitutional campaign on, Arizona has organized a Statehood League to take up the fight for securing its adoption.

The Grange Patrons of Husbandry, at Oregon City, Oregon, has constructed a large barn and warehouse to be used in common.

The widespread attention attracted to the apple in Eastern Washington and Idaho will result in great extension of apple planting the coming season.

The Washington State College at Pullman has scheduled two new features for the winter short course, one being in domestic science, the other in forestry.

Cleaning and polishing of rice has become a great industry in the Hawaiian Islands, having increased from $600,000 in 1899 to over $2,000,000 in 1909.

The National Apple Congress of Denver has elected officers for the coming year. A. L. Prince, New Mexico, is president. The secretary is Clinton Oliver, Paonia.

Work on the siphon under the Colorado river above Yuma is progressing satisfactorily. This is constructed to carry water underneath the river for irrigation on the Arizona side.

President Taft has signed proclamations eliminating from the national forests of California, Colorado and Wyoming 246,000 acres of land, which will later be opened to entry.

British Columbia farmers made up a delegation filling a special train costing over $75,000, and went to Ottawa to insist that free trade with the United States on agricultural products be granted to them, and that free trade on agricultural implements from the United States be another feature. The request was refused.

Coulson's
EGG FOOD

If you were going to erect a large building, you would consult an architect—if you wanted some legal papers drawn up, you would go to a lawyer—because these men have made a special study of their respective professions.

The same principle applies to the feeding of your chickens. Presumably you have not the machinery or formula for making an egg food so that it will be just what your hens need.

That's why you should buy COULSON'S EGG FOOD. It is the result of years of study—it is scientifically mixed by experts with the right proportions of the various ingredients to give a balanced ration.

COULSON'S EGG FOOD means a healthy stock, with great laying powers and eggs of quality. Saves you the time of mixing—provides a better feed—makes more eggs—means more profit, as COULSON'S EGG FOOD more than pays for itself, through making hens lay to their full capacity.

It is especially advantageous to use it at the present time, when the price of eggs is beginning to increase, and when also you are anxious to have your hens in good condition for the molting season.

Hens eat only what they like, but there are many foods they must have, and which must be mixed with their regular food so that they get the desired quantity. The only way the food can be mixed is by improved machinery—that's why you should feed COULSON'S EGG FOOD.

Get it at your dealer's; anyway send for our Catalog which tells about the famous Coulson products and gives valuable information about Poultry Raising.

Coulson Poultry & Stock Food Co., Petaluma
Germain Seed & Plant Co.,
Distributing Agents for California

We have secured the California agency of the

Prairie State Incubators

The best—bar none. Car will arrive about January 1st. Come in and see them, or send for Prairie State Catalog. We also have a carload of the

Baby Buckeyes
50-Egg Incubator for $7.00

Did you ever hear the like? And with this guarantee, too: "Purchaser can operate it for forty days, and if it does not meet with his entire approval, it may be returned to us and the price paid will be promptly refunded."

Carload of these will soon arrive. They will go like hot cakes. If you cannot come in, send for a Buckeye Catalog. "Anybody can hatch chicks with a Buckeye."

WEST COAST SEED HOUSE
TOMPKINS & CO.
111, 113, 115 WINSTON ST. LOS ANGELES
EVERYTHING FOR POULTRY

Rancho Mirasol White Leghorns
Eggs for Hatching, January to June. Day Old Chicks, March to June.
PASADENA, CALIFORNIA.

When writing to advertisers mention the Cultivator

Practical Poultry Culture

A LIVING FROM A SMALL PLANT.

It is always interesting to read about how the "small poultryman" succeeds, and especially at the present time when intensified poultry culture is commanding so much attention. It is profitable to investigate these miniature poultry farms. After all, the size of a poultry farm is measured by its capacity and not by its acreage.

The question of making a living is uppermost in the minds of those who are contemplating engaging in the work. When a limited capital is brought into play it resolves itself down to one important factor—personal labor. Where a poultry plant is to be conducted on a restricted plot of ground, and where the fowls do not have a large range of land, substitutes of all kinds must be brought into action so that, practically, the stock are having the same benefits as derived on large territory.

The writer has come across one of these small places which not only is a model but which has proved that it is possible for a man to make a living on a small tract of land.

John E. Gerhart was for a number of years a cigar merchant in the city of Philadelphia. The close confinement which his work compelled did not agree with his health nor happiness. He longed for country life. When a boy he lived on his father's farm and always took a great interest in the "chickens," but after he grew up and drifted into the city, the question of "chickens" could materialize only in dreams. The back lot of a city home does not, as a rule, afford sufficient space to keep even a few hens. So as the city life and close business confinement began to work on his nerves, it was but natural that Mr. Gerhart should long for green fields and "chickens." Three years ago he came to Hammonton. He looked up the poultry situation. He read and studied the best works on the subject. He soon realized the fact that the present day poultry methods were far different from the old-time "chicken" logic, and that he had to begin all over again. He purchased a property which contained a little over an acre of ground, and on which was erected a poultry house 14x125 feet. In this building he fitted out nine pens, besides a feed room, workshop and storage rooms, thus having everything under one roof. In each of the pens he keeps from 40 to 50 head of fowls. The White Wyandotte and the Single Comb White Leghorn breeds are kept.

Mr. Gerhart is constantly among his poultry, carefully attending to their wants, and leaving nothing undone that might give them comfort. Of all the farms and flocks of poultry the writer ever visited, there are none where the fowls are more tame. They even have no fear of a stranger, and while the writer and Mr. Gerhart were in the yards the hens would congregate nearby and look up into the speaker's face as though understanding every word spoken. Occasionally an individual fowl would be commented upon, and Mr. G. would reach down and pick it up as if it was unable to get away. To get these hens so tame of course took some time and patience, but it has paid. A carefully kept account showed that there was a clear profit of $2 per head average for the entire lot of hens. This, Mr. Gerhart says, is largely due to keeping the stock in a contented frame of mind. When a hen "feels at home" has nothing to scare her, and knows that no harm can come, her energies and food are bound to divert to the production of eggs. Even the Leghorns on this place are so tame that a stranger can pick them up.

Mr. Gerhart is a good feeder. He buys the best of grains, and he watches the appetites of his flocks, and furnishes them according to their wants. "It takes a little time," he said, "but they never in that way become overfed." Asked what it cost to fed his flocks a year, he replied that his White Wyandottes cost him a half cent a day, or $1.80 per year, each, and his Leghorns are kept for about 20 per cent less. He said the Wyandottes laid about the same number of eggs in a year as did the Leghorns, but the latter were more steady in production than the former, stopping only for the annual moult. During the winter—counting from November 1st to June 1st—the Wyandottes' record was about 50 per cent, while that of the Leghorns, for the same period, runs from 50 to 70 per cent, according to the age of the flocks.

Mr. Gerhart explained that his present plant gave him an income, over all expenses, of about $50 per month, but that in another season he hoped to greatly increase the amount. He is now arranging for a large brooding house in which broilers will be raised, and this he believes will mean a substantial increase in profits. At present he relies on sales of table eggs to private custom, and the disposal of a limited number of broilers. His present facilities are not ample to make broiler raising much of an object, and for that reason the new brooding house is planned.

Mr. Gerhart is a great believer in sprouted oats. He remarked: "If I could not have sprouted oats, or a substitute equally as good, I would go out of the poultry business." In his cellar he has piles of boxes in which oats are being constantly sprouted.

The object lessons learned on this farm are:

First—Cleanliness; everything being kept as neat as it is possible to have a house.

Second—Regularity; the fowls are fed at regular hours, nothing being allowed to interfere.

Third—Tameness of stock; making the fowls feel that there are no enemies.

Fourth—Convenience; having everything so arranged as to save time and labor.

Fifth—The trade; it being mostly retail, securing the best prices.

Sixth—Early pullets; getting them out in time to develop and get to laying at the time the hens are going into the moult.

Seventh—Young stock; relying on early-hatched pullets and yearling hens; after the second year all hens go to market.

Eighth—Trap nests; using them so he may know his best layers and each year breed from only such, and also to know how to find out the drones. No idlers are allowed; in fact, Mr. Gerhart cannot afford to keep them.

60,000 "Queens" in the Contest

all along the line last year, and the Queen never fell behind. Friends, you will be interested in knowing about the uniform big hatches produced by the

Queen

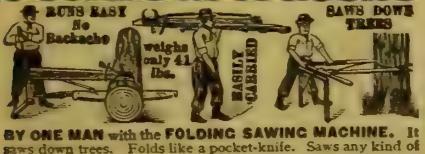
It is the dependable hatcher under *all* conditions, in *everybody's* hands.

Let's get in touch with each other. Get my book to-day! I start people in poultry on the make-good basis. I'll set a Queen down at your station, freight prepaid, and give you the chance to test it any reasonable length of time. Test it 60, 90 or more days, till you are satisfied. 10 year straight guarantee now.

Send your name for my great Poultry Guide. Request on a postal brings it. Tells the truth about Queens—contains reports and pictures from the 61,000 who are making money. Sound poultry advice and rules. Get the book FREE. Address

WICKSTRUM, Queen Incubator Man,
Box 53, Lincoln, Neb.

9 CORDS IN 10 HOURS



BY ONE MAN with the FOLDING SAWING MACHINE. It saws down trees. Folds like a pocket-knife. Saws any kind of timber on any kind of ground. One man can saw more timber with it than 2 men in any other way, and do it easier. Send for FREE illustrated catalog No A 50 showing Low Price and testimonials from thousands. First order gets agency.

FOLDING SAWING MACHINE CO.,
158-164 E. Harrison Street Chicago, Illinois

The
Thomas Hatchery
Produces
FIRST CLASS
BABY CHICKS
White Leghorns
a Specialty

Now booking orders for
April and later delivery.

CARL D. THOMAS, Prop.
Rural No. 2. PETALUMA, CALIF.

Mammoth Bronze Turkeys.

An extra choice assortment of toms and hens from my best matings. Large bone, long body, full-breasted, well-marked birds which are strong and vigorous, from the best strains in the East. Prices reasonable. GEO. A. SMITH, Corcoran, Cal.

"Chicks well hatched are half raised"
CHICKS
White and Brown Leghorns
Orders booked for future delivery
San Jose Hatchery
Henry Langenschwadt SAN JOSE, CAL.

The Arenberg Brooder Stove

Proven to be the most successful Brooder Stove on the market. Awarded gold medal for most Meritorious California invention at California State Fair, Sacramento, September, 1910. Burns distillate, perfectly simple and easy to manage. Write for details. H. F. ARENBERG, Petaluma, Cal

His space is limited and every hen must be relied upon.

Ninth—Exercise! the hens being kept busy. Each pen is large so that there is ample room for them to scratch and take exercise. The floors are heavily littered with cut straw and cut corn stalks, and among this the grain is strewn. They are compelled to work.

Thus, in short, we have the testimony that there is profit in a small farm, and there is every reason to believe that with the additions that Mr. Gerhart is about making to his present plant, the income in the future will be doubled.—American Poultry Advocate.

PROPER FEEDING NECESSARY FOR EGG PRODUCTION.

Proper feeding is one of the most important factors in egg production, says an experienced poultryman. The pullets may be just starting to lay and the year-old hens ought to be in laying condition, but both will be laying better a month from now, and neither will be laying anything like their full quota of eggs unless the feeder and caretaker sees to it that their rations are such that they can make eggs out of it, and that they should be permited to turn all their energies to producing eggs instead of being compelled to fight the lice and the weather elements. Fowls cannot produce many eggs on corn alone. Eggs are made of other elements besides those that corn furnishes. Why is it that your neighbor's half-dozen of "hit-or-miss" hens lay so well when they are fed only on table scraps? It is because table scraps contain nearly all the elements for egg production (except grit). You never had a flock of hens that were so lazy and shiftless that they did not lay well duringg the spring months. In fact, almost any hen, unless she is suffering from injury or chronic ailment, will lay during the spring or early summer, without regard to breed or ancestry.

We know that some hens have an inherent characteristic to lay better than others of the same breed and under the same or similar conditions; but we believe that when hens are not laying it is not their fault, but the neglect of the owner. Of course, during the moulting season the hen is not expected to lay, but if she has been a laying hen when the price of eggs was high, then she has earned a much-needed rest.

It is now time that hens should be started to lay, and meat and green foods are the best things we know of to get hens ready to lay. So many would-be poultrymen have an idea that grain is the natural food for poultry, and think that when they have scattered a sufficient quantity of grain in the litter, they have exercised good judgment in feeding, and the hens in turn should shell out the eggs. We have had flocks of exceptionally good layers lay well on a grain diet, but we have placed these hens before a ration of meat and green food together with the grains, and have increased the output of eggs considerably. We believe that meat, or animal food in general, and green food are the keynote to the production of the greatest number of eggs, when the animal food is fed in sufficient proportions. There is no animal on the farm that when allowed free range seeks as much animal food as does the hen. She must have plenty of animal food and when she gets a sufficiency she fills the egg basket. She obtains the bugs, worms and insects in the summer time and that is when she is the heavy layer. Furnish the ideal summer conditions as to feeding and housing in the winter time and summer's quota of eggs will necessarily follow.

A large amount of grain is wasted because it does not permit the hen to make eggs out of it. The elements that are necessary for eggs are not there. A plain ration of grain that is not producing results can be made into a profitable one by the addition of a proper amount of grain food and meat. Green cut bone will not make a hen lay two eggs a day, but it may make her lay two eggs where she had laid one before. Try it in the mash in the morning. The butcher always has plenty of refuse that is wasted. With a little exertion and friendly terms with the butcher this can be obtained for the hens. The hens will return a large profit for the extra exertion and perhaps the butcher will be glad to buy the eggs at an advanced price for his high-class customers.

As for vegetables, where can they be raised cheaper than on the farm A little work in the spring in preparing the land and sowing the seed and a little act of cultivation when weeds are flourishing will give enough for an exceptionally large flock of poultry on the average farm.

The amount of vegetables that are needed for a flock of one hundred hens on a farm may not be worth very much in dollars and cents, but when turned into eggs the value is increased nearly one hundred fold. Cabbage and mangels make two of the cheapest foods and may be fed either cooked or raw. Cut clover is an excellent green food. When steamed it seems to get much of its freshness when green and the hens certainly relish it. I believe there is no other one green food that contains as many different elements, as does alfalfa or clover. It is very poor economy to attempt to get good results without the aid of all these valuable foods. The amount of such foods to be given depends much on the nature of the flock and their individual characteristics. It must be determined largely by the experience and exercise of good judgment of the feeder.—Coleman's Rural.

POULTRY POINTERS.

Fight lice.

Raise chickens.

Give fowls and chicks plenty of fresh water.

Have regular hours to feed the fowls.

Poor hatches are caused outside the eggs as many times as in them.

Roasters are shipped from four to six months of age.

Meat producing fowls: Asiatics—the Brahmas, Cochins and Langshans.

Charcoal and grit should have a place in every poultry house.

General purpose fowls: American—English and French varieties.

Trap nest your breeders; it is the only way to find out results.

Wheat is cheap at twice the price of corn for a laying feed.

Oats, wheat, bran, and middlings make eggs.

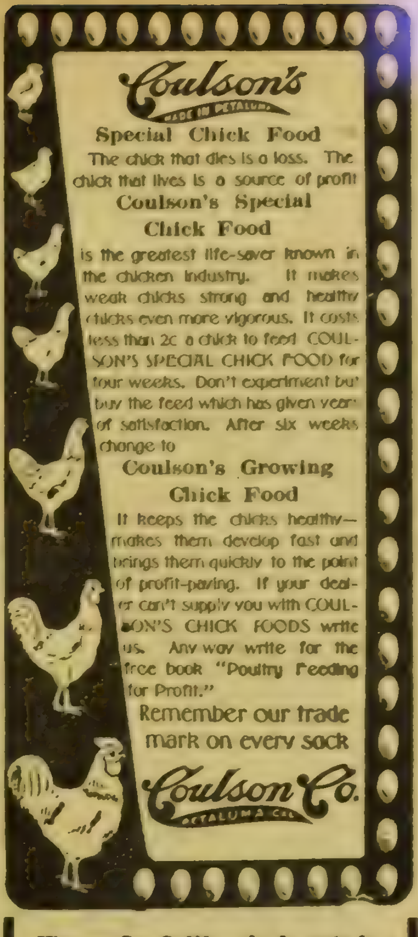
Use commercial creosote for all purposes around the poultry houses.

Damp quarters will cause the fowls to mope and is a good lice-breeding place.

Dryness and sunshine and a dust bath for biddy helps out in the yield of eggs.

Are the fowls getting plenty of grit now? You should see that they are supplied now as much as in the winter.

To purchase eggs is the least ex-



Coulson's
MADE IN PETALUMA
Special Chick Food
The chick that dies is a loss. The chick that lives is a source of profit
Coulson's Special Chick Food
is the greatest life-saver known in the chicken industry. It makes weak chicks strong and healthy chicks even more vigorous. It costs less than 2c a chick to feed COULSON'S SPECIAL CHICK FOOD for four weeks. Don't experiment but buy the feed which has given years of satisfaction. After six weeks change to
Coulson's Growing Chick Food
It keeps the chicks healthy—makes them develop fast and brings them quickly to the point of profit-paying. If your dealer can't supply you with COULSON'S CHICK FOODS write us. Any way write for the free book "Poultry Feeding for Profit."
Remember our trade mark on every sack
Coulson Co.
PETALUMA CAL.

We are So. California Agents for
COULSON'S
SPECIAL CHICK FOOD
Germain Seed & Plant Co.
326-330 So. Main St. Los Angeles, Cal.

Incubators and Brooders

The evidence is conclusive that the PETALUMA is the best Incubator buy that can be made. The best value for the money ever offered and is appreciated most by those who have had varied experiences with other incubators. Why? Because it hatches such large, strong vigorous chicks. More Petaluma Incubators were installed in the large hatcheries last year than all other makes combined. No other incubator in the world has a hatching record to equal the Petaluma.

Write for our Free Catalogue. It is interesting.

We pay freight.

Petaluma Incubator Company
Box 30 Petaluma, Cal., or
Box 30 Indianapolis, Ind.

BABY CHICKS

Hatched from heavy laying stock of S. C. White Leghorn hens that have made Petaluma famous. Also baby chicks from selected S. C. Black Minorcas, Barred Plymouth Rocks and Rhode Island Reds. Send for price list.

Western Hatchery, Petaluma, Cal.
Fred Dye and J. L. Fredricks, Props

WINSLOWS REDS
EXCEL
Single Comb
RHODE ISLAND REDS
Monrovia Cal
RED FEATHER POULTRY YARDS

WINSLOW'S REDS

Bargains in Cockerels and Pullets bred from prolific winter layers.

DR. CHAS. E. WINSLOW
Proprietor
Bx.368 Cor. Charlotte & Greystone
Monrovia, Cal.

WINTERS' WHITE INDIAN RUNNERS

The world's greatest egg producers. First, California State Fair, 1909. First, display pen; first, breeding pen; first, drake; first, duck and second, duck, at the Los Angeles show, 1910. Eggs for hatching.

WHITE AND BARRED ROCKS AND WHITE MINORCAS.

Eggs for sale in season.
C. O. WINTERS, 5307 Washington Ave., Los Angeles, Cal.
Phone, Sunset East 1197.

pensive way to get a start in good poultry, but it will take much longer.

Give the growing chicks all the green feed you can, in one form or another.

A single mating of the turkey hen with the tom will fertilize the entire clutch.

Egg producing fowls: Mediterranean—Leghorns, Minorcas, Andalusians and Anconas.

The brooding hen should be respected, and harsh or cruel methods should never be used to break her up.

Green bone is good to promote eggs, but should not be fed too freely, as it is apt to cause more trouble than it would do good.

You should have a workroom, where tools, buckets, baskets, feed and grit may be kept. Have a place for them and keep them in their place.

Chickens hatched and grown to a weight of two pounds are in good demand throughout the spring and summer season at good prices.

There is more chance to make money for the man who aims at utility with fancy than the man who raises "fancy" only.—American Poultry Adv.

QUARRELSOME BIRDS.

Quarrelsome, aggressive birds are a nuisance in the poultry yards. They are a positive detriment to the rest of the flock. If turkeys, geese, ducks, or guineas fail to get along with the rest of the poultry it is best to separate the varieties so that all may thrive. One such quarrelsome bird often succeeds in keeping those he chooses as his enemies from getting enough food to keep them in good health. We once saw a lone guinea in a flock of chickens that was constantly driving the hens from the roosts, the feed troughs, and watering vessels for no apparent reason than that they were afraid of his sharp little beak. What on earth they kept him for we do not know. Unquestionably he knocked the profits off that flock of hens at least one-fourth every season, and he was no earthly good himself, as they had no guinea hens. Old ganders are often dangerous foes to other ganders, chickens, ducks, turkeys, etc. Such birds should be sold unless very valuable. Oftentimes the cutting of a wing or the filing of the bill enough to make it tender will take all the fight out of such a bird. Turkey gobblers are often dangerous foes to children and older people as well. Try the same remedy on them. Old cocks that persist in fighting can be subjected to a filing of beak and spurs and made quite docile. Sometimes hens get bossy and may need to have some of their egotism taken out of them.

There is no use in expecting fowls to give best results where any considerable number are being ill used, whether it is other fowls or human agency that causes the adverse condition to arise. Children should never be allowed to annoy fowls. We know of a family who allow their children to so chase and annoy the hens that they run like quails if they see a child approaching, and the sight of a childish head in the henhouse door is a signal for every hen to get out as soon as she can to protect life and limb. This farmer always says hens don't pay their keep, that they never get any eggs and their hens wouldn't set to do any good. We do not doubt his word at all, though the real cause of the difficulty is easily understood. —Farmers Tribune.

LOOK OUT FOR WEAKLINGS.

At this season of year it pays to keep a sharp eye on your young stock. If there are any dwarfed or rusty specimens, get them out. One will find some that are not sick, but just unthrifty or undersized. They should be culled out and sold or killed. Don't keep them over to use room needed by the better birds. One such little dwarf left in till the breeding season will result in a number of her kind another year. If the runt happens to be a cockerel it is little short of a crime to keep him in a nice flock. Time and again we see one such specimen ranting around among an otherwise fine flock of fowls just because the owner has been too careless to see to his disposal? Weak fowls or crooked backed individuals, and those having wry tails or crooked breasts should be discarded. Those things crop out with surprising frequency in the second generation. Better sacrifice the bird on the table or in the market than risk its leaving its mark on your flock.

Go out among the birds frequently and look them over for the purpose of detecting these defects. They might go unnoticed a whole season if you do not make a special study of the flock. There is another reason besides the looks of the flock for this careful culling. Any deformity shows a lack of normal vigor in the individual, and vigor is a thing we must always work for in these days of artificial methods of poultry culture. Any fowl that has suffered serious illness should go to market as soon as good health is again restored. She may be as good as new as far as the present is concerned, but her constitution is impaired and her vigor will be below par.

A crooked breast or wry tail is usually the result of overcrowding or improper roosting, and does not in any way unfit the bird for table use except as to looks. No city customer wishes to buy a deformed bird for her table, but you who know the cause will not hesitate to use the bird.—Farmers Tribune.

CALIFORNIA vs. WASHINGTON.

A Santa Rosa dispatch in a daily paper claims the superiority of the California hen under the following statement of fact:

Sonoma county will not take a back seat for any district in the egg business. The press dispatch from the North this week telling of the production of 1305 eggs by nine hens for J. G. Cotton of Oklahoma, Wash., in nine months, or an average of 145 eggs a hen, has caused Paul Stoeckle of this city to produce his accounts, which show 1239 eggs from eight hens during the same months, or an average of 155 eggs a hen. Stoeckle purchased his eight hens from a local poultry establishment and had never had any experience with chickens.

RHEUMATISM IN PIGEONS.

Until I kept a flock I never realized the thousand natural shocks a pigeon is heir to. Among the most insidious of these is rheumatism. If they sleep near an open window, or in a draft, it is pretty sure to develop, frequently in the form of wing disease. The elbow joint is the part most affected, probably on account of being the most exposed and liable to become chilled. The main symptom is a lump on the wing and feverishness.

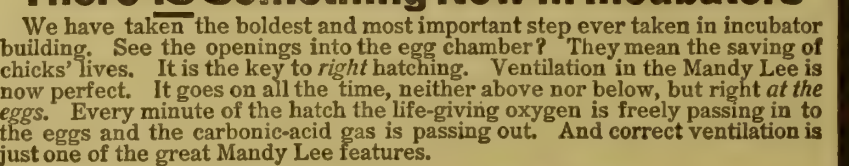
A bird so afflicted should be placed alone in a pen and fed plain food. Pluck the feathers around the affected joint and paint the swelling with tincture of iodine, and it will gradually disappear.—Country Life in America.

A discontented hen seldom is a regular layer. Pay a little more attention to this phase of feeding for eggs this winter and note the success. Don't overdo it and feed an excess, but supply just enough so the hens will look forward to and relish the next feeding. "Variety is the spice of life" and this old adage applies to hendom as well as to the realm of humanity.

Pure breeds will give better returns than the mongrel deadbeats tolerated by our grandparents.

STOP! LOOK! and LISTEN!
WE PAY THE FREIGHT.
60-egg size, $9; 130-egg size, $14; 360-egg size, $25; 612 egg, $40.
"SUCCESS" INCUBATORS
are sold direct to you from the factory at factory prices.
If you buy an incubator from an agent in your home town he is making several dollars on you.
Buy direct from me at the prices as given above, one man's money is as good as another's. I have one price only, and that is lower than any other factory.
FREE 48-page catalog ready soon, will give you complete details.
All I ask is that you investigate.
E. E. McCLANAHAN
108-118 E. Eighth St., Los Angeles, Cal.

All Metal Incubators and Brooders
SIMPLE — SAFE — DURABLE
The result of 25 years experience, and the most Practical Incubator made.
Cycle Hatchers $6.50, Brooder Hatchers $8.50
FIRELESS BROODERS THE KIND THAT RAISE THE CHICKS
THE PHILO SYSTEM
Philo System Book and Poultry Review (one year) $1.00.
READ WHAT OTHERS SAY:
117 Miles Ave., Oakland, Cal., Nov. 12, 1910.
CYCLE HATCHER CO., Oakland, Cal.
Gentlemen: A year ago we started with the Philo System, and raised as fine a lot of White Orpington pullets as anyone would wish to see. The two machines we purchased of you last season have given excellent satisfaction. We shall probably need more this year, and shall use the CYCLE machines in preference to a large incubator. Yours truly, S. N. HAINES.
Send for "Poultry Profits." Mailed on request.
CYCLE HATCHER CO., - - - OAKLAND, CAL.
Warehouse at Los Angeles, Cal. Address all correspondence to Oakland.



This open front door makes perfect ventilation ☛
Mandy Lee is Miles Ahead
It is the only Incubator without a "Sealed," Air-tight Egg Chamber. It supplies the life-giving oxygen freely, draws off the carbonic acid gas, and is saving the lives of millions of chicks.

READ the story of the Mandy Lee triumph in our new catalog. Other incubators are already preparing to imitate and profit by our great discovery.

No guessing with a Mandy Lee

You cannot afford to buy an old-theory incubator which may go out of date and be discarded next year. You should know the truth *now* about the great discovery. The book is free. Ask for it.

There IS Something New in Incubators
We have taken the boldest and most important step ever taken in incubator building. See the openings into the egg chamber? They mean the saving of chicks' lives. It is the key to *right* hatching. Ventilation in the Mandy Lee is now perfect. It goes on all the time, neither above nor below, but right *at the eggs*. Every minute of the hatch the life-giving oxygen is freely passing in to the eggs and the carbonic-acid gas is passing out. And correct ventilation is just one of the great Mandy Lee features.

We Don't Guess—We Measure
The Mandy Lee is as far in advance of other incubators in heat and moisture as it is in ventilation. We do not guess at anything. The sensitive regulator controls heat to the fraction of a degree and *we measure moisture* just as accurately with the Mandy Lee Hygrometer (one sent with every incubator). You know what you are doing. *You* measure and control moisture; *you* control the hatch. The Mandy Lee is the all-season, all climate, all condition hatcher, always producing the most and the strongest chicks.

Mandy Lee Brooders give direct contact heat to the backs of the chicks. That is *real* mothering, the most important thing in poultry. Hovers are raised and lowered as weather gets warmer or cooler—heated from end to end. Chicks do not pile up and smother. Write to-day for catalog and full information.

NEW OUTDOOR BROODER
Heated—Storm-proof

GEO. H. LEE CO., LOS ANGELES, CALIF.
225 West Second St.

Irrigation and Forestry

ELECTRICAL EQUIPMENT OF GAS ENGINE.

No matter how much of an expert a man may be on gas engine matters, there is only an occasional one, say one in seven hundred and forty-two and a half, who is really expert on the electrical equipment also. Yet the sparking device on an engine is just a little bit more important than anything else; without a good spark you can crank yourself blue in the face and out of the church.

First of all, if you are using dry batteries, and they are perhaps best, after all, for a single cylinder motor, you must remember that they need care; never bump a dry cell or let it get wet. A blow hard enough to dent the outer covering of a battery is sure to be hard enough to break the filling or chemical mass away from the outer zinc which forms one pole or the inner carbon which forms the other pole or element; if this occurs, the amount of surface in contact is lessened and internal resistance is set up, reducing the amount of available current even to the point of infinity.

Water, or even dampness of an overnight dew or mist, causes one of two things, and sometimes both: Internal action and external short-circuiting, both of which reduce the cell to uselessness in an incredibly short time. In practice I have found it well to roll cells in melted paraffine wax, no matter how carefully they are to be boxed up afterwards. There are all sorts of boxes made and sold these days that claim to be mist, fog, damp, water and rain proof, but it is just as well to make sure doubly sure where delays may mean big losses of money or crops.

Take a shallow pan of more than ten inches in diameter and shave into it enough paraffine wax, such as all good housewives use to top their preserves with or face their smoothing irons, to fill the pan to the depth of three-quarters of an inch. When this is thoroughly melted—a very small amount of fire is needed, too much is dangerous as well as wasteful—take each cell in turn by the carbon top and roll it over and over in the wax so as to give it a good chance to get into all the crevices and permeate the paper covering thoroughly. This will stick the paper cylinder tight to the zinc and give you an absolutely safe set of cells in anything except a flood. To make them safe from this calamity means a few moments' more work, but even this is worth while, because you never know what may happen in gas engine practice. Tie your batteries together, or stand them up in a box which makes a tight fit, scrape off any paraffine that may have gotten on to the binding screws or patent terminals, make up your connections with good rubber-covered heavy wire, and pour a little hot wax with a spoon on top of each battery, over wire, terminals and all.

If you have made a good careful job of this part of the work, your battery will work under water and keep indefinitely. If you have the right number of cells, you need not buy a new set for months. The right number of cells is as follows: Find out the voltage of your spark coil when you buy it, and connect up—

Four cells in series for 4½ to 5 volt coil.

Five cells in series for 6 volt coil.

Six cells in series for 7 volt coil.

An insufficient number of cells puts a big strain on and shortens the life of your battery, while too many cells is not good for the coil, and also permits a waste of current, which naturally overworks your battery.

Connecting cells in series is the usual manner, namely, zinc to carbon all the way through. A little extra expense at the start will insure you a saving in the long run; buy two or three times as many cells as your coil requires, connect each set in series, and then the whole in parallel. Two such sets in parallel will last as long as three single sets; three in parallel will last as long as six in the ordinary way.

Wet or Edison-Lalande cells are in a class by themselves, and instructions are always given at the time of purchase, and as they are rather a lengthy matter, and the makers are careful to go fully into details, it is unnecessary for me to give any further pointers here.

In the jump-spark field there are several devices from which to choose. One idea is to have the secondary winding contained in the plug itself, making the whole waterproof and eliminating the heavy and troublesome secondary wrie. Still, that plan is not adaptable to every engine, for there may not be space enough for the large plug and cap necessary in such a system. Then there is the alterna-

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tive of a mechanical vibrator, giving but one spark intsead of a shower of sparks as does the magnetically controlled coil of usual design. This method poduces a great saving in current, which offsets the large first cost of installation. Where there is room and occasion for a magneto, the so-called "magnetic make and break" has won considerable favor. By this method contact is made in the plug by means of a magnet, obviating the usual moving parts and possible leaks that occur in the mechanically operated make and break system. Batteries unfortunately cannot be used to operate this system.

If your engine balks or refuses to fire at all after cranking and priming, turn the flywheel over until the timer is in contact; if there is a good loud buzz from the coil, your batteries and wiring are in good order, and it is time to examine the secondary wiring or plug.

If there is no buzz at all, there is something wrong with your batteries, battery wiring and connections, or the adjustment of the coil. Unless you are perfectly sure of your connections, it is well to take them out one by one and scrape bright and clean, and reconnect tight and firm. The best way to adjust a coil is to unscrew the vibrator contact; screw it until it no longer touches the vibrator itself. Fix the vibrator tension until the vibrator hammer is 3-32 inch from the end of the magnetic core of the coil, and then screw down on the contact point until it barely touches its fellow contact. The lighter the contact, the less current is used and the longer your batteries will last. Never make your contact "harder" than is necessary to keep the engine from skipping at high speeds.

Another thing: It is always well to have an ammeter to test your cells. One bad cell will spoil lots of good ones. If a cell is not up to standard, it is much cheaper to throw it away, or use it on another circuit, say for a small hand lamp, alarm clock or other useful toy. Again, you will save yourself money in buying batteries if you are able to test them at the start to see that they are strong and up to standard; the dealer may be perfectly honest, but now and again a battery gets short-circuited in his store or in packing without his knowing it.—Ex.

THE GOVERNMENT'S IRRIGATED FARMS.

The crop season of 1910 in the West emphasized the value of irrigation as a sure crop producer. It was the best year the farmers have known on the big projects of the government, and many phenomenal crop yields are reported.

The movement of settlers westward continues unabated, but there are yet good opportunities to secure an irrigated farm under one of the big canals of the government. About 400 farms are now open to entry for American citizens.

These farms range in size from twenty to eighty acres of irrigable land, and wherever practicable an additional tract of grazing land has been included, bringing the farm unit up to 160 acres. The cost of water right is from $30 to $60 per acre of irrigable land, and is payable in not more than ten annual instalments, without interest. The farms are in South Dakota, Montana, Wyoming and Oregon.

If you want to engage in poultry raising, if you would like to own a stock farm, or if you prefer to grow apples, truck, sugar beets, alfalfa, or engage in general farming, now is the time to apply for one of these free farms, and a letter addressed to the statistician of the United States Reclamation Service, Washington, D. C., will bring you detailed information on this subject.

Settlers who had only a few hundred dollars to start with have been successful on some projects, but many of the hardships incident to pioneer life will be eliminated and the settler will have much more assurance of success if he has a capital of $1,000 or more.

The lands awaiting settlement are in rapidly growing communities, where schools and churches are already established, railroads are in operation, roads have been built, and telephone service, rural free delivery and other modern luxuries are enjoyed.

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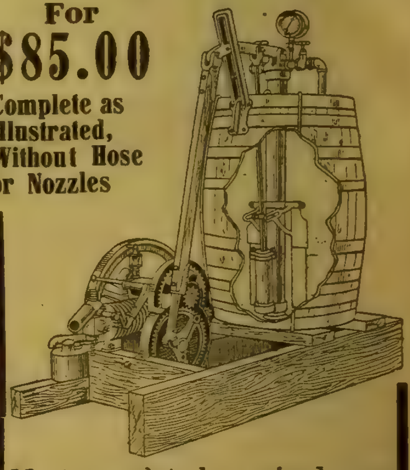

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Queries and Replies

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Weevils.

How may I kill weevils in beans without heating seeds?—Subscriber.

This may be accomplished through use of carbon bisulphide exposed in a receptacle and left for 12 to 24 hours. Use one pint to 1000 cubic feet.

Grafting Nuts.

I have a walnut tree which grows very small nuts. If I graft some of the limbs to a large variety will the pollen of the large nut improve the quality of the others on same tree?—Old Subscriber, Santa Ana.

The limbs which are grafted over will of course bear the improved nut and the pollen from these grafts would affect trees grown from the other nuts but would not increase size of nuts themselves. The only way to secure this improvement is to graft the entire tree, which is not so serious a task as many imagine. In three years better nuts, and often in greater quantity are produced, so that the loss by the waiting is more than made up.

Taste in Milk.

Bought a cow about three months ago which was in poor condition and milk could not be used because taste and smell were so strong. After feeding alfalfa for a time she increased in flesh and the objectionable taste of milk disappeared, but now for about two weeks it has been worse than ever. Have another cow which is fed the same and gives fine milk. Both have free run of water all the time.—J. D., Ioamosa, Cal.

If the other cow is not affected that locates the trouble in the one cow. Try giving her physic of a pound of Epsom salts in a gallon of warm water. Then after that give every day a cup full of bran with a teaspoonful of baking soda. After a week of this treatment if the trouble does not disappear, she should be turned dry and beefed, as it is a constitutional defect. She probably has some chronic liver trouble that will reappear again and again to cause trouble.—M. E. S.

Soil for Lawn.

What is the best soil for lawn? My soil here at Covina is sandy loam and not very good.—W. C., Covina.

Sandy loam unless it is very light is one of the best soils for blue grass lawn, at least one of the easiest in which to start it. In case it is very sandy a coating over with richer and heavier soil may be advisable. It may also be benefited by heavy application of stable manure which may be thoroughly wetted and spaded in and allowed to lie for a few weeks until seeds have all started. Of course, many consider it objectionable to use stable manure on account of Bermuda grass and other weed seeds introduced, but if thorough cultivation follows the application this objection is overcome.

Paint for Tree Wounds.

What is the best paint or mixture to be applied to fruit trees where large wounds have been made in pruning, and where can it be obtained?—E. B. Stone, Campbell.

Some growers prefer to use ordinary grafting wax, which may be made of one pound beeswax, five pounds resin, one pint linseed oil and one ounce lamp black. This has the disadvantage of having to be kept hot at time of application. This may be done by carrying about on a hot brick. Paint answers the purpose perfectly and is preferred by many because it is less liable to flake off than is the grafting wax. A good lead paint or tar is an antiseptic as well as a protection from moisture. The wax, shellac, tallow and similar applications are not antiseptic. Some even apply Bordeaux mixture, but it allows the drying of the wounded place. Coal tar must be used with care or it will injure the bark of some fruit trees. This is especially true with cherries, peaches and plums. We would suggest as the safest plan the use of ordinary white lead and pure linseed oil.

Tuberculosis.

My cow is apparently healthy, but her nose is often dry and feverish, especially in the evening. Is this an indication of tuberculosis? How can I apply tuberculin test without prohibitory cost?—P., Reedley.

I see no reason to think this cow diseased if the only symptom present is a dry nose. Cows are like people, some have dry noses; some people have dry hot hands. Neither in themselves show diseased conditions. If the cow eats well, does not cough and does not grow very thin, then I see no reason to suspect her of illness. I fear some one has been alarming you about tuberculosis. While it is well to be careful, still a great deal of needless worry has been inflicted on people by scarehead articles.

The tuberculin test applied to one cow costs about five dollars they tell me. When I apply it to a larger number of animals the cost is about fifty cents per cow with the additional cost of replacement of any broken thermometers. The best way to get the cow tested reasonably is to take this matter up in the Grange or among the

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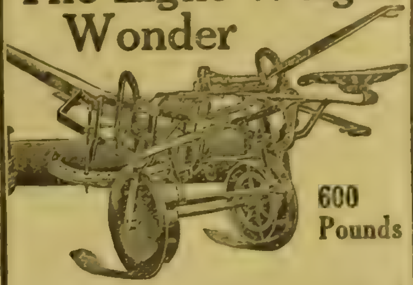

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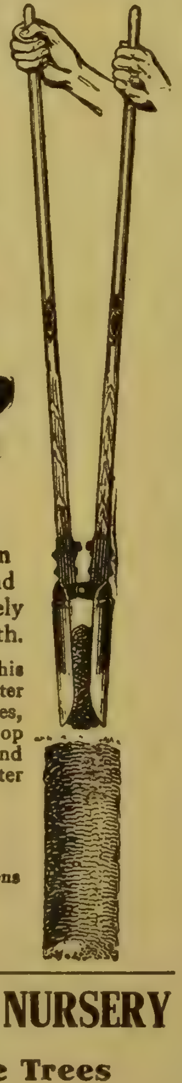

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neighbors and see if enough will not unite in meeting the expense to have the university send down a man to do the testing. I believe that you may find more of the neighbors interested in this matter than you think are at the present time. When twenty-five or thirty cows are tested the expense is grealy reduced, perhaps a dollar would cover it completely. A further value to having a university man do the work is that he will make the work into a class, giving instructions, and then after that the dairyman can do his own testing and send the reading to the university to be passed on as to condemnation of animals. The university will furnish the tuberculin in these cases where they know the applicant is capable of applying the test correctly.

An Egg Ration.

Please tell me what is the best kind of food to give to a flock of hens, and what proportion of each to give, to make them lay the most eggs.—Galt.

A balanced ration, to be profitable, often depends upon the availability of local supplies. A good one is: Morning—Mash, alfalfa, steamed over night; in the morning stirred up with mixed feed of 100 pounds wheat bran, 75 pounds corn meal; 100 pounds ground oats, 50 to 75 pounds linseed meal, a little charcoal and salt. Feed all they will eat up clean in thirty minutes. Noon—a not too great ration of green bone, but plenty of vegetables. At night—Grain, varying kinds, thrown in a litter. The modern poultry food preparations can be recommended, as they save time in home mixing, are carefully compounded, and reasonable in price.

Trouble with Turkeys.

I had, three weeks ago, seventy-five as fine, healthy turkeys as one could wish to see—forty-eight hens and twenty-seven gobblers. At that time one gobbler took sick, which I separated from the flock. Within the week twenty-two more gobblers took the same disease. From reading, I infer it is canker.—Q. C. W.

From your description, birds are suffering from canker, which some authorities also classify as roup. Judging from your letter, you must have a malignant case, which will probably result in the destruction of the flock before it can be checked. Remedies in virulent cases are more or less problematical; even when cures are effected, the "cured" birds should not be used as breeders. The disease being infectious, and the Toms fighting more or less, renders them more liable, by reason of even light wounds, than the hens. Experienced breeders do not doctor sick fowl subject to malignant canker or diphtheritic roup.

More Particulars.

Can you tell me something about pruning peach trees from four to seven years old and vines about seven years old?—P. F. D., Selma.

It would be very easy indeed to tell something about pruning peach trees, but the "something" might not even touch the point upon which the inquirer wishes information. The same applies to vines—some varieties of vines (presumably, the inquirer means grapes) are pruned long, some short, and to give full instructions which might reach the needs of the inquirer would require a volume. We mention these points for the benefit of this one inquirer and for many others who write, little thinking the extent of the answer called for. A treatise on pruning can be furnished by the Cultivator at $1.50. It has nearly 600 pages, and still does not exhaust the subject by any means. Past Cultivators also have had pages of material touching upon pruning of deciduous trees and vines. If inquirers will bear in mind and give particular points desired, instead of asking such extensive questions, their queries may be handled more intelligently within the space at our command in this department.

Cost of Raising Turkeys.

What is the cost of raising turkeys to marketable age? Turkeys will be fenced on two and one-half acres alfalfa, but grain must be bought. Prices of grain here, $1.25 for Kaffir, and $1.25 for barley.—Subscriber, Brawley.

We cannot answer, but will ask turkey raisers' experience. Eastern farmers estimate cost at 50 cents each, but, of course, this does not take into account the vast amount of feed secured by the turkey while foraging. In California, and at prevailing prices of grain, the fattening would cost that amount, to say nothing of food while growing.

VETERINARY

Answers in this column by Dr. Fred G. Matthews, are without charge. For immediate mail answer remit $1.00. In writing questions give full symptoms or particulars of injury of animal.

Fracture or Dislocation.

My colt was running and fell over some lumber. Now the leg swings sidewise and when moved sounds are heard at the lower shoulder joint. Is this dislocation or fracture?—V. N. Delano.

Evidently this is a fracture near or involving the elbow-joint as luxation or dislocation of the elbow in the horse is rare, if at all possible. Careful nursing in slings for a period of one month is the only treatment to be recommended. Recovery without lameness is doubtful.—F. G. M.

Skin Disease.

The skin of a hog is breaking and peeling off in large patches. The food consists of barley and skimmed milk. Other pigs associated with this one have not contracted the disease.—Subscriber, Hollister.

This disease would be classed as a form of dermatitis which may originate from various causes. Isolate the pig; change the food; and, after scrubbing the diseased spots with soap and warm water, apply a mixture of equal parts of linseed oil and liquid sulphur. Shake the mixture frequently while applying. Repeat every three days till a cure is effected.—F. G. M.

Capped Hock.

A mule three years old has capped hock. Please prescribe.—Subscriber, Reedley.

Blister the enlargement with red mercuric iodide 1 drachm, mixed in 1 ounce of cerate of cantharides. The application may be repeated after three weeks if desired.—F. G. M.

Red Mange.

A collie dog has a large portion of the skin surface on the under side of the body covered with a much inflamed rash, which is spreading rapidly. Pimples appear with festered points.—Subscriber, Ventura.

The fact that the disease is spreading would lead one to suspect "red" or follicular mange. Apply to the diseased surface, every third day, a mixture of chloroform 1 part, creolin 2 parts, and denatured alcohol 5 parts.—F. G. M.

Money Making Little Liners

In this department we will insert your advertisement under a classified head for 1½ cents per word per issue. No ad accepted for less than 25 cents. Our classified columns are the clearing house for our many thousand readers.

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For Sale—Registered Holstein Bulls; 1 to 2 years old. Some sired by Prince Juliana, brother of former world's record heifer, Juliana De Kol. Dam and granddam, A. R. O. cows. Three record-breakers in some of their pedigrees. M. E. Sherman, Minnewawa Vineyard, Fresno, Calif.

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For Sale—A 20-acre farm for $20 cash and $20 a month; possession now; $90 to $125 per acre; your crops pay for the land. Rich, level land for alfalfa, oranges, almonds, grapes, cows, chickens; abundance of ditch water, for irrigation, for $1 an acre a year. Where else can you get this? In Oakdale Colony, near good town and railroad station, climate delightful. T. Wiesendanger, 207 S. Broadway, Los Angeles, Cal.

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For Sale—Thoroughbred Mammoth Bronze turkey toms, spring hatch. Only a few left, all fine, large, well marked birds. Have two female Scotch Collie pups left, pedigreed stock. Mrs. A. C. Wisegarver, San Fernando, Cal.

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Special Sale—In order to make room for my breeding stock I am offering the remainder of my thoroughbred Mammoth Bronze Turkey Toms for $6 each. My turkeys are of the best in the state, spring hatch and weigh 20 to 24 lbs., and reach a large size at maturity, as those to whom I have sold stock previously can testify. Mrs. Nellie Hart, Holtville, Cal.

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How to Make Money—Mrs. A. Basley's New Poultry Book is just out. It is without exception the most wonderfully complete manual on the subject of successful poultry management ever written. The secret of how to raise every turkey hatched and the "Basley Formulas," now published for the first time, are worth many times the price of the book. The "Western Poultry Book" is a practical book by a practical woman Price $1.00. Address Mrs. A. Basley, Box 77, Venice, Cal.

Hayes, R. B., Poultry Fancier and Rhode Island Red Specialist—30 breeding pens of Reds, 20 pens miscellaneous varieties. See our birds, they tell their own story, or write for circular. Eggs for sale only. Yards in Arroyo, opposite Ostrich Farm. Box 35, Garvanza Sta., Los Angeles, Cal. Phone East 1631.

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WIN EVERY TIME

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For Sale—White and Buff Wyandottes from best strains. W. C. Parker, 113 Pacific Ave., Santa Cruz, Cal.

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MISCELLANEOUS

For Sale—350 stands bees located near Los Angeles. L. E. Williams, Hemet, Cal.

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For Sale—Second-hand windmills, tanks, engine, farm machinery that will do same work as new at half price. 8 ft. steel aermotor, tower, 3000 gal. Redwood tank, 10 ft. stand, galvanized pipe, pump and rods complete, $69 on cars; another with smaller tank, $48. 10 ft. steel aermotor, steel tower, 5000 gal tank, fine 16 ft. stand, galvanized pipe, pump complete $135 on cars, cost $245 new and only used one year. Tanks, all sizes and kinds. Finest and largest stock of second-hand tanks we have ever had. Special sale; two 8000-gallon, practically new, with rod, hoops, at $55, cost new $92.40. Round stock tanks 2x8 ft. wide, $10.

Look!

3½ H. P. Fairbanks engine, fine geared jack, complete for $125 or with 4-inch pipe, rods, cylinder, 20 ft. 3-inch galvanized outlet pipe. Nearly brand new 2000 Redwood tank, 20 ft. stand, pumping plant complete cost new $350, our price on cars, $210, and guaranteed first-class. Second-hand farm machinery, all kinds. Anything a rancher wants we can supply. Call and see. Demmitt Co., upstairs, 120 N. Main St., Los Angeles.

AN UP-TO-DATE SEED CATALOG

Aggeler & Musser's 144 page, 1911 Seed Catalog Has Just Been Received.

The Lithograph cover is a work of art. And the 144 pages are full of information valuable to the RANCHER or GARDENER, particularly to the beginner. If you have not received their Catalog be sure and send for it at once. It is also interesting to the Poultry Fancier. Twenty pages are devoted to the description of Petaluma Incubators and Brooders, and everything pertaining to successful Poultry Raising. Write for it

AGGELER & MUSSER SEED CO.
113-15 No. Main St., Los Angeles, Cal.

Fertile eggs for hatching. Choice varieties. White Rocks, White Wyandottes and White Orpingtons at $1.50 to $4.00 per setting; $6.50 to $10.00 a hundred. Ducks—White Muscovy, Dark Muscovy, White Indian Runner, White Pekin, Buff and White Orpington, $1.00 to $3.00 a setting; $5.00 to $12.00 per hundred. Send for Circular. Pheasants' eggs in season.

WHITE FOWL FARM, Moorpark, Cal

DIVIDEND NOTICE.

Savings Union Bank of San Francisco (Member of the Associated Savings Banks of San Francisco), northwest corner California and Montgomery streets. After January 3, 1911, Market street at Grant avenue and O'Farrell street. For the half year ending December 31, 1910, a dividend has been declared at the rate of four (4) per cent per annum on savings deposits, free of taxes, payable on and after Tuesday, January 3, 1911. A dividend not drawn will be added to the deposit account, become a part thereof, and earn dividend from January 1, 1911. Money deposited on or before January 10, 1911, will earn interest from January 1. R. M. Welch, Cashier.

DIVIDEND NOTICE.

The German Savings and Loan Society. The German Bank. (Member of the Associated Savings Banks of San Francisco.) 526 California street. Mission Branch, 2572 Mission street, near Twenty-second. Richmond District Branch, 432 Clement street, between Fifth and Sixth avenues.

For the half year ending December 31, 1910, a dividend has been declared at the rate of four (4) per cent per annum on all deposits, free of taxes, payable on and after Tuesday, January 3, 1911. Dividends not called for are added to the deposit account and earn dividends from January 1, 1911. George Tourny, Manager.

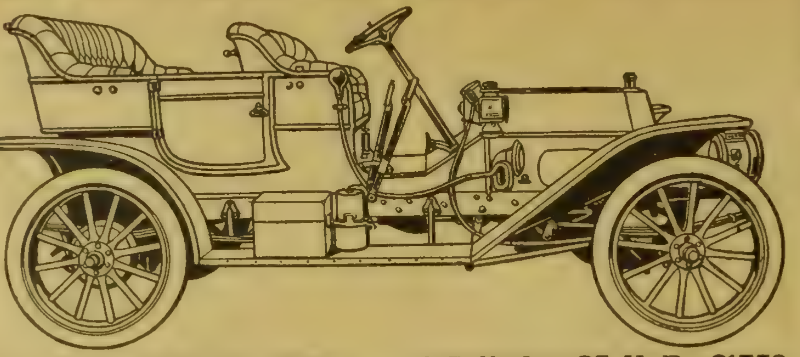
Business Notes

MAKING GOLD.

A recipe for making gold is sent out by Geo. C. Roeding of Fresno. It will be of much interest to owners of orchards which have not been as good producers as they should. The secret is very simple and we believe following the method outlined will aid greatly in the making of gold. The little booklet can be slipped into the vest pocket, but it's worth writing for.

One of the most exquisite calendars we have seen this year is that of the California Fruit Exchange, which handles much of the fresh deciduous fruits of the San Joaquin and Sacramento Valleys. The coloring is entirely in brown with the exception of the rich coloring of the California poppy, which is beautifully done in its natural tints. The calendar is suspended by a brown ribbon which harmonizes with it and helps to set off its beauty.

DUROCAR The Car for the Farmer



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CYANIDE guaranteed 98-99% for generating HYDROCYANIC ACID GAS
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GOLD BEAR FERTILIZERS
FOR CALIFORNIA SOILS

TANKAGE
The Citrus Fruit Growers of California use thousands of tons of Tankage annually. Tankage is the best form of Organic Nitrogen.
HUMUS-FORMING. ALL AVAILABLE
We are the largest Pacific Coast producers of High Grade Tankages in perfect mechanical condition and of
"GOLD BEAR" FERTILIZERS
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5000 Valencia Late Orange trees 3000 Grafted Walnut trees
500 Budded Avocado (Alligator Pear) trees

People who intend to plant lemon or grafted walnut trees this season will have to secure them from some source early as they are now very scarce.

A. R. RIDEOUT
Magnolia Nursery Whittier, California

When writing advertisers, mention Cultivator.

General Agriculture

THE INFLUENCE OF STUBBLE BURNING.

By Alfred J. Ewart, D. Sc., Ph. D., F. L. S., Government Botanist and Professor of Botany in the Melbourne University.

The statement is frequently made that burning off the stubble after a grain crop improves the fertility of the soil and favors the growth of the succeeding crop. This effect is generally ascribed to the alkaline ashes left behind after burning, but since these ashes are no greater in amount than what is returned to the soil when the stubble is plowed in, the only difference could lie in the fact of their being immediately available for absorption by the plant, instead of being slowly set free as the stubble decomposed in the soil.

The experience of others has led them to deny either that stubble burning does improve the fertility of the soil, or that, if there is any effect, it can be due to the ashes of the crop. Mr. Herbert (Journal of Agriculture of South Australia, 1910, page 791) compared the effects of scattering ashes over one plot and burning rubbish on another. The experiment, though a very crude one, showed in favor of the latter plot. In the same Journal, page 967, the explanation is suggested that where stubble burning exercises a beneficial effect on the succeeding crop, this may be due to the effect of the partial sterilization of the soil by heat. Recent investigations have shown that steaming soil, or heating it to 180 degrees Fahrenheit, temporarily destroys the minute animal organisms which feed upon the nitrate-producing and nitrogen-fixing organisms in the soil. As a result, the bacteria increase in numbers and make more nitrogen available for the use of the crop.

As against this explanation, we have the fact that burning off stubble only heats the immediate surface of the soil, and does not appreciably affect the temperature of the deeper layers below the surface inch or two. Even in burning off dense scrub, it is surprising to how small an extent the soil below the surface layers becomes heated. It is only when thick roots smolder away underground, or when the soil contains so much peat or humus as to burn itself, that it becomes strongly heated to any depth. The explanation, therefore, though ingenious, cannot be regarded as definitely established without further proof.

It should be remembered that three classes of bacteria, which render nitrogen available for the use of the plant, exist in the soil. The first group, which we may generally term nitrate bacteria, are concerned in converting the organic nitrogen of the humus in the soil (which ordinary plants cannot use) into nitrates, chiefly of calcium and potassium, which they can freely absorb. This action can only go on when alkaline or alkaline earth bases are present, such as calcium, potassium, magnesium, etc. The addition of such substances in the form of ashes, even if the amount was slight, might temporarily increase the production of nitrates, particularly in acid soils. At the same time, this means that more humus is oxidized and the nitrogen capital of the soil reduced. Further, it is only where the soil contains nitrogenous humus that any such action is possible. Hence, stubble burning not only decreases the amount of humus returned to the soil, but also accelerates the exhaustion of that already present in it. Owing to their high mean temperature, the oxidation of humus is already sufficiently rapid in most Victorian soils.

The second and third classes of bacteria bring the nitrogen of the air, which is useless to the ordinary plant, into combinations which are, or become, available for the plant's use as nitrogenous food. Of these nitrogen-fixing bacteria, one is that which grows in the root-tubercles of Leguminosae and which gives to these plants their special value for enriching the soil with nitrogen. The third group, of which the best known is perhaps the form called Azobacter, grows free in the soil, and is in part responsible for the maintenance or increase of the nitrogen content in virgin soils. The nitrogen-fixing bacteria, which grow free in the soil, can, however, only flourish when they are supplied with carbohydrates such as are provided under natural conditions by the slow decomposition of the plant-remains returned to the soil. If the soil is cropped, and, still more, if the stubble is burnt, the supply of humus soon becomes so small that these nitrogen-fixing soil organisms diminish to a minimum, and the soil loses more nitrogen by waste and drainage than it gains from the air.

In this case also, therefore, burning off the stubble is bound ultimately to produce a diminution in the amount of nitrogen added to the soil by these nitrogen-fixing soil organisms, since it decreases the supply of carbohydrate material on which they live. Steam sterilization, by destroying the small animal organisms which eat these bacteria along with others, might temporarily increase their activity, but such treatment is not, of course, practicable on a large scale. When steam sterilization is used by horticulturalists for destroying weed seeds in manure and potting soil, it apears to cause an increase of nitrogen available for the plant's use, and this may be sufficient to cause excessive leafy growth. Apparently, this is the result of an increase in the bacteria which produce nitrates from humus, and not in the nitrogen-fixing bacteria. Hence, the action will be best shown where large quantities of humus are present, as in stable manure or rich garden soil. Here, a little waste of humus is a comparatively small matter, whereas on an agricultural scale, maintenance of the humus content of the soil is one of the most important factors in preserving its fertility.

The burning of the stubble destroys a few weed seeds, but at the same time the warmth and the resulting ash favor the germination of any hard seeds present in the soil, and also provides precisely those conditions which aid in the spread of fire weeds, some of which easily become troublesome. It makes the impoverishment of virgin soils cropped without manuring take place more rapidly than would otherwise be the case, and it does this without producing any commensurate interest in the crop to compensate for the loss of the capital stored in the soil in the form of nitrogenous plant-food while it was in a virgin condition. It is the act of a spendthrift to burn away in a year or two the capital which was accumulated for him by nature without any effort on his part, and which might, when properly husbanded, have lasted him his whole lifetime.

The use of fire to clear the ground in preparation for cultivation is common among all savage races who practice a more or less rudimentary kind of agriculture, but with the scientific advance of agriculture, fire plays less and less part in its daily doings. Even in a garden, the less the amount of "rubbish" that is burnt, instead of being rotted wherever sufficiently soft and free from weed seeds, the less the amount of manure that will need to be carted in to keep up its fertility. Precisely the same thing applies on a large scale, and to an even greater extent to agriculture. —Journal of Agriculture, N. S. W.

MORE APPLIANCES FOR AGRICULTURAL EDUCATION.

The Oxnard High School has just completed an artesian well at a cost of between $400 and $500. It is a 10-inch well bored to a depth of one hundred and sixty feet. The flow is between seventy-five and one hundred miner's inches. It is said to be the best artesian well in the section.

The school farm has just been graded for irrigation preparatory to putting in school gardens, nursery and special experiments. The agricultural laboratory is one of the best equipped laboratories in the state.

F. H. Bolster, formerly with the Gardena High School, is in charge of the agricultural work of the school.

RUST RESISTANT WHEAT.

Considerable attention is being given by the Department of Agriculture to the breeding of rust-resistant wheats. At the Minnesota Agricultural Experiment Station a "disease plat" is maintained, where the second generations of numerous hybrids between durums and hard spring wheats have been grown and subjected to a severe rust test. The aim is to secure the rust resistance of some of the durum wheats combined with the grain of a hard spring wheat suitable for general purposes. Some promising strains have been selected for future trials.

SAUER KRAUT ON A SMALL SCALE.

No better, surer or more convenient way of preserving cabbage for winter use has yet been devised than that of making into sauer kraut. It is ready on a moment's notice, and will keep until spring.

If you have no kraut cutter, slice with a knife as fine as possible. This is one secret of fine product. Salt to taste, and pack in a barrel or crock.

After one head is thus prepared, pound with a wooden potato masher or block of wood prepared for the purpose until there is a good covering of juice on top. You will be surprised to find how much juice there is in the cabbage.

Keep on slicing and pounding and salting until the crock is nearly full. But leave room for the rise occasioned by fermentation.

Cover well with a cloth, and place a plate or other tight-fitting cover over, then weigh down with a flat stone to keep it entirely under the brine. In two or three days it will commence to "work," and in as many weeks it is tart and ready for use, unless kept too cold.

If too much salt is used, it will kill the acid, and the kraut will soon spoil. The ordinary taste for this condiment will be sufficient test.

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SELLERS FOR

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Warehouses in every Principal Town in the Citrus Belt.

San Francisco and Los Angeles Produce Markets

Los Angeles Markets

LOS ANGELES, Dec. 28.

Butter.

Butter is steady, even firm, and at last week's quotations.

Prices to trade 2½c in advance of the following Produce Exchange quotations:

Extras	35
Firsts	32½
Elgin	30
Cooking	25

Cheese.

Local	18
Northern, fresh	18
Oregon Daisy	18@18½
Imported Swiss	32
Domestic Swiss	21@24

Eggs and Poultry.

The Christmas trade caused a sharp advance in eggs, but a 2c decline occurred on Tuesday, leaving them still 1c above last week's quotations.

Paying price f. o. b. Los Angeles is:

Local ranch candled	38
Case count buying price	34
Eastern fresh	32
Eastern storage	30
Seconds	28

Dealers pay for live poultry f. o. b. Los Angeles:

Hens, per lb	15@17
Roosters	9
Spring	17
Turkeys	20@22
Ducks	17
Geese	12
Squabs, per doz	1.75

Live Stock.

The following quotations are f. o. b. Los Angeles on all stock:

Hogs, 175 to 200 lbs	8¼
Prime steers	6
Heifers	5
Calves, per lb	6½
Sheep, ewes, per head, shorn	5.00
Lambs, per head	3.75@4.25
Wethers, shorn	5.00

Potatoes.

Wholesale prices are:

Highlands	1.85
Salinas	2.00@2.10
Lompoc	2.00@2.10
Oregon	1.85@2.00
Oregon, Early Rose	2.00
Nevada	1.85
Early Rose Northern	2.00
New potatoes	4.00@5.00
Sweets, yellow, per ctl	2.50

Onions.

Wholesale quotations:

Oregons	1.85
Australian Browns	1.65@1.75
Nevadas	2.25
Garlic	8

Vegetables.

Wholesale quotations:

Artichokes, northern, doz	1.25
Beets, sack	90
Beans, Lima	8@10
Beans, green	8
Beans, wax	8@10
Brussels sprouts	8
Bell peppers, lb	8@10
Green chilis	3@4
Cucumbers, box	1.00@1.25
Cabbage, sack	50@60
Celery, crate	2.25@2.75
Cauliflower, crate	1.25
Carrots, per sack	90
Egg plant, lb	8@10
Horseradish	12½
Onions, green, doz. bunches	20@25
Leeks, per doz	40
Lettuce, crate	75@90
Oyster plant, doz	40
Okra, lb	10
Peas, lb	6@8
Parsley, doz bunches	20@30
Parsnips, doz. bunches	40
Pumpkins, lb	1@2
Radishes, doz. bunches	20@25
Rhubarb, Crim. Winter, box	1.00@1.25
Spearmint, doz. bunches	30@35
Spinach, doz	20@25
Hubbard squash, lb	1½
Summer squash	1.00
Tomatoes, crate	70@90
Turnips, sack	90
Watercress	20@25

Citrus Fruits.

Navels	1.75@2.25
Grapefruit	2.25@3.50
Lemons	1.50@2.50
Tangerines	1.75@2.00

Fresh Fruits.

Wholesale prices on the market are:

Alligator pears	2.50@4.00
Apples, Belleflower	1.00@1.25
Spitzenbergs	1.75@2.50
Jonathans	2.00@2.50
Greenings	1.10@1.25
Pearmains	1.10@1.50
Pippins	1.20@1.35
Pineapples	8@8½
Casabas, doz	2.00@2.25
Grapes, lug	1.75
Mangoes, lb	10@15
Persimmons, lb	5@6
Pomegranates, lug	1.00
Guavas, basket	6@7
Pears, lb	5
Bartletts, lb	8@10
Winter Nelis	2.50
Strawberries	10@15
Blackberries	8@10
Raspberries	12@15
Christmas melons	2.50

Dried Fruits.

Wholesale prices are:

Apricots	13
Evap. Apples, fancy, lb	11½@12½
Figs, box	1.65
Peaches	7@8½
Nectarines	10
Pears	11@12½
Prunes	7@12
Plums	10

Beans, Dried.

Wholesale quotations:

Limas	5.25@5.50
Black eyes	5.50
Pinks	6.00
Lady Washington	4.25
Small white	4.00@4.25
Garvanzas	4.50
Lentils	7.00

Nuts.

Wholesale quotations are:

No. 1 soft shell walnuts	15@16
No. 1 hard shell walnuts	14
No. 2, all kinds	11
Chestnuts	10@12
Filberts	15
Almonds, IXL, lb., new	16@17
Pecans, polished	15@17
Peanuts, Eastern	7@7½
Peanuts, California	6

Honey.

Wholesale quotations:

Extracted water white	9½
Extracted light amber	8
Comb water white	18@19
Light amber	15
Beeswax	30

Hay.

Buying prices f. o. b. cars Los Angeles are:

Barley hay	13.00@14.00
Wheat hay	14.00@15.00
Tame oat	14.00@16.00
Alfalfa	13.00@14.00

Grain.

Wholesale selling price f. o. b. Los Angeles:

Wheat, new, ctl	1.80@1.85
Corn	1.60
Popcorn	3.50@4.00
Egyptian corn	1.75
White oats	1.80
Rye seed	2.00
Seed barley	1.25

Feed Stuff.

Wholesale selling price f. o. b. Los Angeles:

Alfalfa meal	1.10
Cracked corn	1.65
Cracked wheat	1.95
Shorts	1.80
Bran	1.55
Oil cake meal	2.50
Feed Meal	1.70
Rolled barley	1.20

San Francisco Markets

SAN FRANCISCO, Dec. 27.

Butter.

Butter advanced and commanded 37c on Friday, but took a tumble over the holidays, and now stands at a half cent above last week's quotations.

Price to trade 2½c in advance of the following Produce Exchange quotations:

California extras, lb	35
California firsts	30
California seconds	27
Storage	29

Cheese.

California flats, new	12@17
Cal. Y. America, fy., new	16@17
Oregon, fancy	15½

Eggs and Poultry.

Eggs manifested a weakness and a sharp decline on Friday of last week, but have recovered, and the market is steady at present quotations.

Official quotations of the San Francisco Wholesale Dairy and Produce Exchange are:

Fresh ranch extras	38½
Firsts	35
Seconds	33
Storage	30

Hens, doz	4.50@10.00
Fryers, doz	5.50@6.00
Ducks	6.00@10.00
Broilers	3.00@5.00
Roosters, doz	4.50@8.00
Turkeys	21@23
Geese	2.00@3.00
Pigeons	1.50@1.75
Squabs	2.50@3.50

Live Stock.

San Francisco prices, gross weight:

Steers	4¼@5¾
Cows and heifers	3½@4¾
Calves, lb	4½@6¼
Hogs	5@8
Milk lambs, unshorn	5¾@6
Wethers, No. 1	4¾@5
Ewes, No. 1	4¼@4½

Potatoes.

Wholesale market quotations:

River White, cwt	1.25@1.50
Salinas Burbanks, cwt	1.75@1.90
Oregon Burbanks, cwt	1.50@1.65
Sweets, ctl	2.85@3.00

Vegetables.

Wholesale quotations:

Artichokes	25@40
Beans, string, lb	10@15
Beans, Lima	8@10
Cabbage, cwt	65
Carrots	75
Cucumbers, hothouse, box	2.00@2.50
Celery, crate	75@2.00
Chili peppers, lb	4@6
Egg plant, lb	5@8
Mushrooms	50@1.50
Okra, box	40@60
Peas, lb	4@8
Summer squash, box	1.00@1.50
Rhubarb, box	75@1.25
Tomatoes	50@1.15
Turnips	65
Garlic, lb	4@5

Onions.

Onions, California, sack	1.35@1.50

Citrus Fruits.

Navels, new	1.50@2.50
Grapefruit	1.50@3.00
Lemons	2.00@2.50
Limes	4.00@4.50
Tangerines	1.00@1.50

Fresh Fruits.

Apples, box	40@1.00
Apples, Belleflowers	75@1.00
Newtowns	90@1.15
Spitzenberg	1.00@1.25
Bananas, Hawaiian	1.00@1.50
Huckleberries, lb	7@10
Pears, Bartletts	1.50@2.00
Winter varieties	1.00@1.25
Persimmons, box	50@85
Pineapples, Hawaiian	2.00@3.50
Pomegranates	50@1.50
Strawberries, chst	5.00@6.00

Dried Fruits.

FRUITS—1910 crop, f. o. b., carload lots, per lb.: Apples, 8½@9¾c; apricots, 10¾@13c; do, Moorparks, 14c; peaches, 5½@7c, with a premium of ⅛@¼c on Muirs; prunes, bulk basis, Santa Claras, 6¼@6½c, with ¼c premium on 60s to 90s; outsides, 6@6¼c; figs, 6¼@7c for white, and 5@5½c for black; pears, 9¾@13c.

RAISINS—1910 crop: London layers, in 20-lb. boxes—6-crown clusters, $2.50; do, 5-crown, $1.75@2; 4-crown, $1.30@1.40; 3-crown layers, $1@1.10; do, 2-crown, 95½c@$1. Seeded, per pkg.—Fancy, No. 16, 5¼c; choice, No. 16, 4¾@5c. Loose Muscatels, in 50-lb. boxes—Standard, 4-crown, 4½c; do, 3-crown, 4c; do, 2-crown, 3½c. Dried grapes, 3c. Seedless—Muscatels, 3½c; Sultanas, 4½c; Thompson's, 4¾@5c.

Nuts.

Walnuts, No. 1 soft shell	15
Walnuts, No. 1 hard shell	14½
Almonds, '10 N P U	13
Almonds, '10 Nonp	15
Almonds, '10 I X L	14
Almonds, Peerless	12
Pecans	14@17
Chestnuts, California	9@12½

Beans, Dried.

Limas	4.00@4.80
Pink	5.00@5.25
Black eyes	5.00@5.25
Small white	3.25@3.50
Large white	3.25@3.50
Kidneys	5.75
Garvanzas	2.50@3.25
Bayo	4.75@5.25
Horse beans	2.00
Red Mexicans	5.00@6.50
Cranberry	4.00@4.35

Hops.

Hops, coast, 1910	14@17
Hops, 1909	10@13
Hops, Oregon	12@15

Honey.

Water white comb, '10	14@16
Amber comb	10@11
Extracted white	8½@9
Extracted amber	5½@6½
Beeswax, lb	24@30

Scott, Magner & Miller say:

Arrivals of hay for the past week have been 3,191 tons, a slight increase over last week's receipts, which were 2,900 tons.

There has been no noticeable change in the market, either as regards prices or demand. Considerable uneasiness is being felt throughout several of the hay sections owing to the dry weather, which still continues, and holders of hay in the country are quite firm in the prices demanded; so much so that there has been very little country buying during the past week, owing to the fact that hay cannot be bought at these asking prices and brought into San Francisco and sold at the prices prevailing here without a decided loss.

Export demand has also been very light, as well as coastwise shipments. The demand from Washington and Oregon has absolutely stopped for the present at least.

Receipts of alfalfa have been decidedly light, and, although the demand has also been light, prices have been maintained on this commodity.

We quote the wholesale prices in round lots on today's market as follows, viz.:

Fancy wheat	12.50@13.50
No. 1 wheat or wh and oat	10.50@11.50
No. 2 wheat or wh and oat	9.00@10.00
Choice tame oat	11.50@12.00
Other tame oat	8.00@10.50
Wild oat	8.00@10.00
Stock hay	6.00@7.00
Alfalfa, ton	9.00@11.50
Straw	40@50

Grain.

Wheat, No. 1	1.42½@1.47½
Barley, fancy	1.10@1.11¼
Barley, good to choice	1.06¼@1.08¾
Barley, poor to fair	1.00@1.05
Oats, white	1.47½@1.55
Rye, new crop	1.52½@1.55
Alfalfa seed	18@20
Mustard, brown	4½
Millet	2¾
Flaxseed	5@5½
Broom corn seed, ton	23.50

Feed Stuff.

Bran, ton	30.00@32.00
Feed cornmeal, ton	35.00@36.00
Cracked corn	35.00@36.00
Ground barley, ton	21.50@23.50
Rolled oats, ton	29.00@31.00
Middlings	34.00@36.50

Oil cake, ton	40.00@41.50
Cocoanut cake, ton	24.50@25.50
Mixed feed, ton	25.00@27.00
Shorts	31.00@32.50

Citrus Market

LOS ANGELES, Dec. 28.

The quietness which usually follows a holiday now obtains in the orange market. Most of the packing houses are still shipping an aggregate of from 70 to 100 cars daily. This is heavy for this season, but, considering the crop to be marketed, none too heavy. If shipments do not exceed this, it is probable the present fairly satisfactory prices will continue. The coming week will notice a material increase, however, and with the constantly improving quality of the fruit, fair prices will probably continue. One most satisfactory feature is the very high quality of the fruit. At this season of the year the state has never made a better showing.

A fair quality of lemons will only command about $2, while extra fancy goods will bring as much as $2.50. This is not high, but there are some shipments being made which will supply the market. Californias are still favorites over any importations.

Shipments.

Shipments of oranges from Southern California since November 1st 3,172, of lemons 666, making a total of 3,838 cars of citrus fruit. To same date last season, orange 898, lemons 546, making a total of 1,444. The year before, 1908, there were 1,339 cars of oranges shipped, 606 lemons, or a total of 1,944.

NEW YORK, Dec. 16.—Eight cars navels, one car Arizonas sold. Market easier on navels, higher on fancy Arizonas, lower on choice. Weather fair and extremely cold.

NAVELS—	Avge.
Golden Flower, xf, Redlands G O	2.50
Niagara, fy, Stewart Fruit Co	2.50
Gobbler, fy, or, Stewart Fruit Co	1.85
Mariposa, fy, Earl Fruit Co	2.55
Highland Grove, fy	2.55
Highland Grove, choice	2.35
Glendora Hts, fy, G H O & L As	3.10
Glendora Hts, ch, G H O & L As	2.85
Watchumna, L C Assn	3.00
Heart	3.10
ARIZONAS—	
Cactus	2.40
TANGERINES—	
Heart	1.85
GRAPEFRUIT—	
Highland Grove	1.00

CLEVELAND, Dec. 16.—Eight cars navels and one mixed car sold. Market strong on good color navels. Colder.

NAVELS—	Avge.
Serenade, T C Ex, Sanger	2.45
Red Shield, A C G Ex, Azusa	2.85
Cosmos, S B Ex, Yerkes Spur	2.45
Belt, R H Ex, E Highland	2.25
Hetch Hetchy, Pioneer Ft Co	2.25
Gobbler, fy, or, Stewart Ft Co	2.15
Blue Label, C C Ex, Lindsay	2.65
Canna, S B Ex, Yerkes Spur	2.75
Gold Buckle, R H, E Highland	2.70
Preferred	2.95
Honest Pack, xc, Tustin Pac	2.15

CINCINNATI, Dec. 16.—Cold. Market strong on navels. Advancing Floridas. One car navels and eleven cars Floridas sold.

NAVELS—	Avge.
Gold of Ophir, B C Ex, Palermo	2.55
Floridas, Brights	1.95 to 2.55
Russets	1.85 to 2.55

PITTSBURG, Dec. 16.—Six cars sold. Market steady on navels and lemons. Cold.

NAVELS—	Avge.
Serenade, T C Ex, Sanger	2.70
Jasmine, D M Ex, Monrovia	2.65
Lone Palm, xc, McG & Willard	2.60
Iris, D M Ex, Monrovia	3.00
Golden Flower, xf, Redlands	2.90
Tower, ch, Malone Ft Co	2.55
LEMONS—	Avge.
Lemon Cove, C C, Lemon Cove	2.60
Justrite, C C Ex, Lemon Cove	2.25

ST. LOUIS, Dec. 16.—Cold. Market firm on good stock. Nine cars navels sold. One car lemons.

NAVELS—	Avge.
Table Mountain, B C, Thermalito	2.35
Oakleaf, T C, Porterville	2.50
Searchlight, S S Ex, Orange	2.50
Pointer, A C G Ex, Charter Oak	2.50
Camellia, xf, Red Mu Og	2.50
Cactus, xc, High Ft Assn	2.40
Tulip, T C Ex, Porterville	2.55
Valley, T C Ex, Porterville	2.55
Red Shield, A C G Ex, Azusa	2.70
Excelsior	1.55
Highlander, xf, High Ft G A	2.50
LEMONS—	Avge.
Gavilan, Riv Ev, Arlington	2.55
Tulip, T C Ex, Porterville	2.10
Housewife, Riv Ex, Arlington	1.90

BOSTON, Dec. 16.—Six cars sold. Very cold. Market unchanged on oranges, easier on lemons.

NAVELS—	Avge.
Forgetmenot, T C, Plano	2.10
Cosmos, S B Ex, Yerkes Spur	2.65
Niagara, fy, Stewart Ft Co	2.25
Crocus, S B Ex, Yerkes Spur	2.90
Marguerite, xc, Earl Ft Co	2.45
Royal Crest, fy, Stewart Ft Co	2.40
LEMONS—	Avge.
Crocus, S B Ex, Yerkes Spur	3.35
Cosmos, S B Ex, Yerkes Spur	2.35
Lotengo, fy, Sparr Ft Co	2.80
Canna, S B Ex, Yerkes Spur	2.80
Coral, S B Ex, Yerkes Spur	1.70
Crackshot, or, Sparr Ft Co	2.45

PHILADELPHIA, Dec. 16.—One car lemons sold.

LEMONS—	Avge.
Euclid, or, Growers' Ft Co	2.80
Flower, Growers' Ft Co	2.40

FLORIDAS—Fourteen cars sold. Oranges, $1.85@3.65; average, $2.30. Grapefruit, $1.35@3.55; average, $2.25. Tangerines, $1.30@2.20; average, $1.70. Market firm.

A FIRELIGHT PARTY.

"A pleasant little holiday entertainment that could be readily copied in any locality was one for which the invitation cards were decorated with tiny pen-and-ink sketches of hearthstones with burning logs thereon," says Mary Dawson, in the Woman's Home Companion for December. "The gathering was named "a firelight party," and the guests were urged in the text to come and read the 'pictures in the fire' on a certain day and date.

"The company arrived on the occasion appointed, to find the living-hall lighted by a genial hickory blaze, which formed the principal illumination, other luminaries in the form of gas and lamps being turned low or extinguished. The fireplace itself was prettily set off with a background of green pine boughs and garlands of hemlock and evergreen.

"After an exchange of greetings, all gathered around the fireplace while the entertainer read aloud the touching passages from 'Our Mutual Friend' where Lizzie Hexam reads the pictures in the glowing firelight for her younger brother. Afterward, paper and pencils were distributed, and each was asked to write a short description of the picture seen in the fire on the present occasion. There were no specifications, each one writing the tale his fancy suggested, without restrictions, save as to time. At the end of ten minutes the papers were collected and read by the hostess, who awarded a framed picture representing a firelight scene for the one considered cleverest.

"The awarding of the prize was followed by a symposium of ghost stories, original or otherwise. A popular novel was presented to the player whose tale was adjudged most hair-raising. Corn was popped, and marshmallows toasted on pointed sticks. Just before adjourning for supper, a clever amateur reader, dressed in old-time costume, came quietly out from the shadows and delighted the company with several love poems, among them Owen Meredith's 'Aux Italiens.' Two of the recitations were delivered with an accompaniment of low music.

"Supper was served at little tables, by candle-light, and consisted of sandwiches, cider, coffee, cookies, nuts and other such homely good things."

THE FARM AUTO.

A correspondent of the Farmer's Tribune, who calls this the auto age in agriculture, says:

Perhaps I need not spell out the word 'auto' in order to give the name of the machine I have reference to for use on the American farm. There may be some prejudice yet in the minds of some against the auto, because it is too high in price. But that will wear away as its real value and varied uses on the farm become better known. Its uses as only and chiefly a pleasure carriage will become reversed, and the pleasure feature be made incidental to its value as a machine to do other work cheaper and better than the horse or hand of man. Whatever else the auto machine may not be able to do cheaper and better than any other power, it has already been settled by actual trials this year on the large Graham farms near Washington, Indiana, that with its gasoline geared traction engine it will pull from eight to fourteen plows and harrows, haul grain to market, pull or push the threshing machine, and do most anything that horse or man power can do and at much less expense.

I cannot here give the particulars; I can merely call attention to the general merits that are in the machine so as to get it investigated by interested parties. Motor power in the auto machine has been supposed to be too high priced for all to have it. That may have been true at the start, but prices will come down, and the buying capacity of the farmers can go up —even if they have to form "rings" to accomplish it. The matter of getting an auto big enough to plow and harrow can start with a farmers' combine of several persons as stockholders and in the same neighborhood, for such a machine will plow and harrow from 25 to 30 acres in a day. Of course this new motor power will have to have some time to come into more general use, but the fact that its mission as a labor saver is fixed, in my opinion, proves that the machine has come to stay.

Another fact is also pretty well settled and that is that farming is our chief business and that it will lead all others. This fact ought to bring the auto to the front for investigation. Its real merits are only as yet known to the more well-to-do financially and for pleasure purposes; but this is far from being the limitation of its lines of usefulness to man. As horse and man will soon become too scarce and expensive as laborers this motor auto can take their places. The farmer ought to look up the auto, which already is his best friend.

To show in a single item what this auto will bring in progress to the farm, let us apply it in a practical way to the plow and harrow. At present we will assume that from one to half a dozen adults own and run a farm. With the old style plow, one person follows on foot behind the team that makes one furrow. By evening he has plowed two to two and a half acres and is tired; so is the team. But that same person as chauffeur of an auto can ride all day, and with less care than the team requires. He can direct a half dozen or more plows and harrows to suit.

Furthermore, such a person can, if necessary, by himself, or other joint owners, run the auto all night long. The horses get tired but the auto does not. And we can all see that when the auto is not at work it does neither eat nor drink like the horse. If a single farmer does not feel able to buy an auto, a half dozen or more can form a ring and run it by the different owners exchanging labor, for one person can do more work with an auto than a half dozen persons with teams.

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Don't allow anyone to smoke around the stable. It is not only dangerous, but the milk is liable to be tainted.

To produce their full milk-giving capacity cows should be kept as free from disturbance as possible.

There should be good light, good ventilation and good drainage in the stable.

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FRIENDLY MESSAGES

Second King—What mean ye, shepherds?

Second Shepherd—Hear, O King!
Give ear unto a wondrous thing.
We sat and watched our flocks last night,
When suddenly the heavens were bright
As though a thousand mornings shone.
Amid that light we saw a throne,
But not who sat thereon. Below
We saw the angels come and go,
Glorious and gracious to behold,
With shining wings and harps of gold.
They touched their harps, and sang a song
So low and sweet, so loud and strong
One might live on it his whole life long.
We knew not half the angels sung,
For it was in an unknown tongue;
But the refrain thereof was plain
(O, may it never cease again!)
"Glory to God!" it ran, and then,
"Good will on earth, and peace to men!"

—Richard Henry Stoddard, in Masque of the Kings.

A PROFITABLE CALL.

Rousing himself from a sound sleep, Dr. Stone realized that his door bell was ringing loudly. Throwing up the window, he looked out. As it was past midnight, and pitch dark, he could see nothing.

"Who's there?" he demanded.

"Is Dr. Stone in?" a strange voice asked.

"Yes," the physician replied. "What's wanted?"

"Well, Doctor, my name's Jones. Perhaps you don't remember me, but I've met you."

"I don't recall the name," returned the doctor, much annoyed at being disturbed.

"Well, that doesn't matter," replied the stranger. "The fact is, Doctor, I have a very sick child, and wish you to visit her. Can you come?"

"How far is it?" questioned Stone, getting interested. As he had not been established in business very long, he was extremely anxious to answer all calls.

"About five miles out in the country," replied the stranger. "I'll pay you well for your trouble."

"All right. I'll be right down," and the doctor closed the window.

As Stone proceeded to dress, his wife, who had been aroused by the noise, asked: "What is it, George? A call?"

"Yes," he answered, hurriedly.

"Who is ill?"

"Some child. That's all I know now."

"I do wish you wouldn't answer any calls at night," his wife complained. "I hate to stay here alone."

"But I must go, dear. A doctor should never shirk his duty." And he put the finishing touches to his toilet.

"I'm glad I've got my automobile," he continued, endeavoring to change the subject. "It's certainly handy to jump right in and pull a lever and let her go. It's much better than bothering with a horse. But I must hurry. Now, don't worry. I'll soon be back."

Leaning over, he kissed his wife, and passed from the room. On opening the front door, he found himself confronted by a short, thick-set man, carrying a satchel.

"I suppose you have no objection to my accompanying you?" asked the stranger.

"Not in the least," replied the doctor, closing the door. "Wait here; I'll have the machine out in no time."

"Machine?" queried the stranger, as if much surprised.

"Yes—my automobile," returned Stone, hurrying around the house.

"Oh, that's so much the better. We'll get there sooner," the stranger called after him.

In a few moments they were speeding over the main street of the town, leaving a cloud of dust in their wake. Not a person was to be seen; the entire population was evidently lost in the land of dreams.

The doctor increased the speed, notch by notch, until they were fairly flying over the dusty road, and they soon left the sleepy town behind them.

"What seems to be the trouble with the girl?" asked Stone, keeping his gaze fixed straight ahead on the road before him.

"Oh, I guess it's nothing very serious," replied the man, in a harsh voice. "You had better slow up a bit. I want to learn how to run this thing."

"Eh!" ejaculated Stone, raising his eyes from the road and looking toward his companion. He found himself looking straight into the barrel of a pistol held in the hand of the smiling stranger.

"What — what — what does this mean?" he stammered, throwing off the power and allowing the car to run under its own momentum, while he glared at the man at his side, upon whose face there was a determined expression.

"Mean?" the man replied. "It simply means that I wanted to get away from that town."

"Then there is no one sick?" queried Stone.

"No. That was simply a ruse on my part."

At this moment the car came to a stop in the middle of the road, and Stone released his hold upon the steering wheel. His first thought was that he had a crazy man to deal with. He decided to humor him until help of some kind could be obtained.

"Where do you want to go?" the doctor asked, with forced calmness, looking intently at the man.

"To the next town," he replied, still menacing the doctor with his pistol. "I know where it is—twenty miles away. Get me there as soon as possible. I must get away from here."

"All right, I'll take you there," Stone answered, "and we'll get there in a hurry, too. I'll show you how fast this thing can go." And the doctor once more started the car.

"Yes, let her out to the limit," the other ordered, with a harsh laugh.

Stone did as he was bid, and they were soon speeding over the roads at a fast clip. The doctor saw no way but to obey the crazy man, for that he was crazy he had not the least doubt. He still kept him covered with the pistol. Who but one deranged would have acted as this man had?

"Slow up now!" the man cried suddenly. "I want to learn how this thing goes. After I learn, you can get out. That's right," he continued, as the doctor obeyed him, "slow up, and give me all the details. But I warn you not to try any monkey business. I've got you covered; and at the first move I shall not hesitate to shoot."

Stone was tempted to take a chance

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and grapple with the man. But upon second thought he gave it up. If the stranger had been unarmed, he would not have hesitated a moment, but he concluded it would be madness to try it while the man held the pistol. But something must be done, and that right speedily, for there was no telling what crazy actions the man might take it into his head to do.

"Come!" growled the man, uneasily. "Get busy, and show me how it works."

"All right," began Stone. "This is how it works," pressing a lever. "That makes it go ahead. This one," pressing another, "stops it. The speed is regulated by this one. It's quite simple, after all.

The man watcehd the doctor's every move. The wild look in his eyes had disappeared, and his mind seemed centered upon the working of the machine.

Stone did not betray any signs of nervousness now. Already he was revolving in his mind a plan to turn the tables upon his captor, and his set jaw accentuated the determination of his purpose.

"This lever regulates the speed," he repeated, casually. "I'll throw it ahead a little."

The car was now covering the ground at a good pace.

"Let it out for a few miles," the man commanded. "After that, you can slow up, and get out and leave the car to me."

The doctor started at this command. He wasn't sure now whether the man was crazy or was only intent upon stealing his car. He now seemed rational enough.

"Very well, I'll do as you say. But here's something I forgot to tell you. See that little foot-lever there in front of you—down on the floor, close by the dashboard?"

"Which one?" asked the man, leaning forward a little.

"That one—the small one at the right of the other one. See it? Look close."

The man leaned further forward in his endeavor to see it.

"I don't"——

At that moment, with a sudden jar, the car came to a stop, and the man shot over the dashboard—the position Stone had gotten him into had been just the one he wanted—and landed on the edge of the road, about ten feet ahead, and lay still.

At the same time the doctor had braced himself for the shock, and as the other landed in the road he threw on the power, the car shot ahead, and passed the prostrate figure before it showed any signs of life.

He had covered perhaps about a hundred feet when he heard shots in rapid succession, and bullets whizzed dangerously close to his head. But he kept on, and was soon out of range.

Then a daring plan entered the doctor's head as he slowed down the car. Why not try to capture the man? He was too dangerous to be at large, as there was no telling what he would do next. He knew the fellow's pistol must be empty, for he had counted the shots. If he hurried, he might reach him before he had a chance to reload the weapon.

Quickly turning the car, he started back. As he approached the spot, he slowed up. A dark object sat by the roadside. The doctor stoped the car and sprang out, determined to put up a good fight if the man showed resistance.

"The game's up," the man said, as he looked up and saw the doctor. "I've got a broken leg, or you wouldn't have found me here. I emptied my pistol, too, and I haven't any more cartridges."

"I'm sorry you got hurt," replied Stone, "but it was the only way."

"Oh, I don't blame you," returned the man. "I took a chance, and lost, that's all. But get me away from here —anywhere—so I can have my leg fixed up."

"I'll take you back to town," replied the doctor, and after some trouble the man was placed in the car and the return trip began. It did not take long to cover the distance, and the car was soon speeding up the main street. The doctor intended to take the man directly to his own house, where he could give him the best attention. As they approached the business section, a crowd of people was noticed in front of the bank. As he stopped the car, a man cried:

"Hello, Doctor! Where have you been at this late hour?"

"Just taking a little spin," he answered, carelessly. "But what's the trouble here?" he added.

"The bank's been robbed," replied the man, who was no other than the chief of police, advancing toward the car. "The watchman was found bound and gagged, and the money gone. We were about to start a hunt for the robber. He can't be far away."

"Well, I'd like to help you," returned Stone, "but I must take this man home and fix him up. He's got a broken leg. Here, take this," and he handed the satchel to the chief, who, taking it, was about to walk off, when in some manner it flew open, revealing many packages of bank notes.

"What's this?" exclaimed the chief, in amazement. "Where did you get this?"

"This man had it in his possession, Chief," replied the astonished doctor.

"Then he must be the robber," answered the chief.

Such proved to be the case, as the cashier of the bank, arriving at that moment, identified the money as belonging to the bank.

The man was soon in jail, where his wounded leg was attended to. The robber seemed to lose his nerve when once behind prison bars. He broke down, and confessed all. He had carefully laid his plans. Knowing there was no train out of town until eight o'clock the next morning—too late for a safe get-away—and knowing there was one from the next town at a much earlier hour, he had carefully planned to catch it, making use of the doctor's car to do it. He would probably have succeeded had not the doctor adopted the means he had used to overcome him.

It turned out later that the man was a noted bank robber, a thousand dollars' reward being offered for his capture. This the doctor received, and when it was added to the substantial sum the officials of the bank gave him, the doctor admitted that the call had been a very profitable one.—Country Gentleman.

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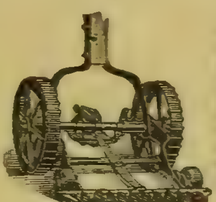

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THE RUDE BARBER.

A farmer from Minnesota entered a barber shop at Butte for the purpose of getting his hair cut. The rural one's locks had an odd, ragged look and, after regarding them scornfully for a moment, the barber demanded brusquely:

"Say, who cut your hair the last time?"

"My wife," said the farmer, with an uneasy smile.

"She did, eh?" said the barber. "What did she do it with—a knife and fork?"—Lippincott's.

Life is so sweet that even at 40 a man does not like to think that he has lived half of it.

Nobody really enjoys being poor, but anybody would rather be here in that condition than not at all.

Every day that we spend without learning something is a day lost.—

"ANDREAS HOFER," IMPORTED SAANEN BUCK.

(See article on page 666.)

THE OLEO TAX.

The present oleomargarine law which provides for a tax of 10 cents per pound upon artificial colored oleomargarine, does not prevent fraud in the sale of oleomargarine. Congress intended to make the manufacture of yellow oleomargarine unprofitable so that oleomargarine should not be made to look like butter. In framing the law Congress failed to "reckon with its host." The manufacturers of this butter substitute soon devised means for producing their product without artificially coloring it. So largely is this done that only enough tubs of artificially colored oleomargarine is produced to furnish enough packages from which to sell the yellow stuff from stamped packages into which tub after tub is emptied before the original tub is quite empty. Dealers are not required to destroy the stamp until the tub is empty, hence it takes a long time to empty it.

In doing this, even when selling the product for just what it is, the dealer can demand an exorbitant price (just a few cents less than for butter) and throw the blame on the 10-cent tax, when in reality the stuff is taxed at only ¼ of a cent per pound.

This fact should be kept in mind: Less than 3 per cent of the oleomargarine put upon the market has been tax paid at 10 cents per pound. Quote this when an uninformed friend refers to that "burdensome tax" on oleomargarine.

The present law needs amending so that it will prevent fraud. Oleomargarine men insist that its weakness is a reason for its repeal. The National Dairy Union insists that its weakness is a reason for its amendment so that it will be effective in preventing fraud.

GREAT BUTTER PRODUCER.

One thousand and thirty-seven pounds of milk, testing 6.45 per cent fat, and yielding 66.9 pounds of butter fat—this is the July record of Rouge 2nd of Brookfield, a two and one-half year old heifer owned by Iowa State College. This phenomenal heifer began her record the 15th of last January. In the six and one-half months from then until August 1 she produced $116.92 worth of butter fat. After deducting the cost of feed this left a net profit of $68.20. The total amount of milk produced in this time was 6778.8 pounds, and of butter fat 362.59 pounds.

Counting the Cost—"So you want to marry my daughter, do you, young man?"

"Y-e-s, s-i-r."

"Well, can you support a family "

"H-how many are there of you, s-sir?"

QUESTIONS.

Are you planning with your children for happy winter evenings?

Are you feeding your mind with the care you feed your stock?

Are you dreading worse things or are you hoping better things?

Are you making profit by brain work this winter, or waiting to make profit by muscle work next summer?—Spokesman Review.

BOTH STRONG.

"For a moment," he related, "I held my breath."

"My!" she interrupted, admiringly. "How strong you must be!"

He edged away, blushed, and felt in his vest pocket for a clove.—London Telegraph.

Tommy—Pop, does the earth go round?

Tommy's Pop—Yes, my son. But it wouldn't if it was divided among all the people who want it.—Philadelphia Record.

THE CAVITY.

Cholly—The dentist told me I had a large cavity that needed filling.

Ethel—Did he recommend any special course of study?

Mary had a little skirt
  So tight below her knees
That she could neither run nor walk
  And didn't dare to sneeze.
—Cleveland Plain Dealer.

Mrs. X—I despise that woman. She tries to make a cloak of religion.

Mrs. Y—Yes, and she hasn't enough of it to make her a decent bathing suit.—Boston Transcript.

WHY HE WAS WAITING.

"What are you waiting around here for?" asked the officer of a sailor who was standing at the door of a church where a wedding was taking place.

"Waitin' to see the tied go out, sir," replied the sailor, touching his hat.—Yonkers Statesman.

Here is Andrew Carnegie's recipe for securing a good wife: "Pick a girl who takes care of her mother—the girl who is useful in the household and does not make the most show in the ball room." Andrew knows quite a number of things besides the secret of making money.

"What? Fell downstairs! How did it happen?"

"Why, you see, I started to go down, and my wife said: 'Be careful, John!' And I'm not the man to be dictated to by any woman."

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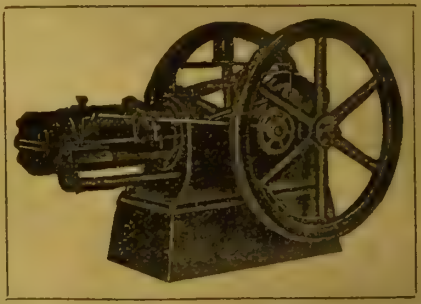

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